A Prophylaxis Symposium.*

Instructions to Patients in Regard to the Cleansing of Teeth.

Foreword.

The very interesting articles upon the general subject of the cleansing of the teeth, herewith published, have been obtained from the writers, in reply to a circular letter sent to a number of specialists, which was worded as follows:

My dear Doctor:

We hear very much to the effect that a clean tooth never decays, from which, of course, we necessarily get the notion that the patient must cleanse his teeth. We now have a number of specialists throughout the country devoted to the prophylactic cleansing of teeth, coupled with teaching patients how to do it at home.

I believe, however, that there is not yet any one method in common use. It would almost seem to the lay mind that this procedure is not so complicated, but that prominent specialists might agree on one way.

In order to discover to what extent the specialists disagree, I am writing this letter to several, yourself, of course, among the number, and I would like very much to have you reply to the following questions, with

permission to publish your reply along with those of the others who will contribute, so that we may get the various views in juxtaposition.

The questions are as follows:

(1) Please outline the directions which you give to patients in regard to the cleansing of their teeth. Tells us how you tell the patient to clean his teeth; that is to say, how do you describe your technique to your patient?

(2) Do you recommend dentifrices of any kind, and if so, what?

(3) Will you let me have a specimen of the brush which you think most desirable?

Contribution by Grace Rogers Spalding, D.D.S., Detroit, Mich.

I see that you, too, are laboring under a misconception with regard to the work of the specialists devoting their time to the so-called "prophylactic cleansing of teeth, coupled with teaching patients how to do it at home." While a part of the ultimate aim of our work is to prevent decay in so far as it is practical, yet our greatest ambition and desire is to produce and maintain clean, healthy and comfortable mouths, containing an efficient masticatory apparatus. We value much more the sustaining and supporting structures of the teeth than we do the crowns of the teeth. As a result of our efforts in this direction we necessarily prevent a large amount of dental caries, which is a great satisfaction, to say the least.

The operation of caring for one's own teeth is a difficult one for the average patient, and it is because it has been considered so easy that to find a well-cared-for set of teeth, even among dentists, is the rarest occurrence. I believe you will find that the specialists agree upon a few fundamental principles, viz:

1. That it is absolutely essential for a set of teeth, with the periodontal tissues, to be placed in such a condition that to keep the teeth clean will be practical.

2. That the patient should have an equipment entirely adequate in his particular case to care for his teeth and should understand how and when to use it.

3. That the equipment includes tooth brushes, ribbon dental floss, an abrasive and a mouth wash.

4. That the massage of periodontal tissues is most important.

5. That the food particles must not be allowed to remain in the mouth long enough to ferment or decompose.

Opinions will also differ as to the kind of tooth brushes, antiseptics and abrasives; also as to the method of brushing and massage. What

we wish is desirable results, which one person will secure with one set of tools and method while another can more quickly accomplish this with a totally different equipment and system. Who shall decide as to which one is right if both are obtaining satisfactory results?

In reply to your direct questions:

1. It would not be possible to give the directions which I give to patients, since each case presents problems of its own and must be taught individually. I emphasize the importance of the use of dental floss, and with this, as with tooth brushes and massage, I demonstrate the method first on a typodont, then in my own mouth, and then in the patient's mouth. Then I ask him to use the floss and brush his teeth while watching himself in the mirror before he leaves the office. If after this the patient does not keep his mouth clean it is because he has not understood instructions or because he has not made the effort, which latter is inexcusable.

I prefer the circular motion of brushing and always lay emphasis on the rule, *Never brush teeth crosswise.* Also I emphasize the importance of taking but a very short length of dental floss between the fingers, and with that under control, carefully draw it back and forth past the contact point, rubbing one surface as it enters and that of the approximating tooth as it is being drawn out. All patients need to be reminded now and then of former instructions, and a helpful plan is to have cards printed with suggestions as to the care of the teeth. The massage is done by finger pressure, rather than by surface friction, with a brush or cotton roll

2. Tooth powder is necessary if one wishes to accomplish results with the tooth brush. It should be used largely on the molars and lingual surfaces of *all* the teeth each time a patient brushes his teeth, which should be as soon as possible after meals. I make it a rule never to recommend a dentifrice the formula of which I have not seen. We have a powder prepared for use in our practice only, containing magnesium oxide (heavy), magnesium carbonate, precipitated chalk, soap, saccharine and flavoring. Also a slightly heavier one for smokers and children.

3. A Circular brush, a sample of which I am sending you, is useful in all cases excepting where there are very short crowned teeth. Each patient should have at least two different *shapes* of brushes. The brushes should be selected to meet the needs of the case.

Contribution by Gillette Hayden, D.D.S., Columbus, Ohio.

Patients are shown the kinds of brushes they are to use and an explanation is given of those qualities of the brushes which adapt them to the needs of the case.

By personal use of the brushes and ribbon floss before the patient, it is possible to demonstrate in a pictorial way, as well as to describe the methods of manipulating the brushes and floss.

Each jaw is to be cared for separately and the gums as well as the teeth are to be brushed.

Buccal and Labial Surfaces.

Upper Jaw: 1. Place the brush, bristles up, between the occlusal surfaces of upper and lower molars on the left (or right) side, with the end of the brush touching the tissues immediately back of the last molar

2. Move the brush to the left (or right, stretching the cheek muscles sufficiently to give room for the brush to be carried between the upper teeth and the cheek. At the same time almost close the jaws, then carry the brush as high as the tissues will allow.

3. Shift the lower jaw to the left (or right) as in masticating.

4. With a rolling motion of the brush bring the bristles down over the upper teeth, at the same time opening the lower jaw in order that the occlusal surface of the lower teeth may catch the brush as it is turned down.

5. Lift the brush away from the teeth, turn the bristles up, carry the brush up high on the gums above the teeth and repeat the directions in Number 4 from twenty to twenty-five times.

Repeat this process for the buccal and labial surfaces of all teeth in the upper arch.

Lower Jaw: Reverse the direction of the brush and shift the lower jaw to the right when brushing the lower left teeth, and to the left when brushing the lower right teeth.

Lingual Surfaces from Cuspids Distally.

Upper Jaw: 1. Place brush, bristles up, inside the mouth, with the end of the brush opposite the last molar.

2. Put the tongue against the back of the brush and carry the bristles high up on the palate.

3. With a rolling motion, bring the bristles down over the teeth.

4. Lift brush away from the teeth, the tongue still pressed against the back of the brush, then carry the brush up high on the palate again and repeat directions in Number 3 from twenty to twenty-five times.

Lower Jaw: Reverse the direction of the brush, brushing from below upward.

Lingual Surfaces of the Six Anterior Teeth.

Upper Jaw: 1. Place brush, bristles up, inside the mouth.

2. Put the tongue against the back of the brush.

3. Bring the brush outward against the teeth so as to bring the bristles nearest the handle end of the brush in contact with the lingual surfaces of the anterior teeth.

4. With an outward and downward motion bring all the bristles of the brush over the lingual surfaces.

5. Repeat twenty to twenty-five times, directing the brush against two teeth at a time, which are all the brush will cover in this position.

Lower Jaw: Reverse the direction of the brush and place the tongue on the end of the brush.

Occlusal Surfaces.

1. Brush backward and forward over occlusal surfaces of both upper and lower teeth.

Necks of the Teeth.

1. Place brush on the teeth so that the buccal (or lingual) cusps will fall in the centre of the bristles and lengthwise of the brush.

2. Divide the bristles by forcing half of the bristles down over the buccal (or lingual) surfaces of the teeth, leaving the other half on the occlusal surfaces.

3. With a short back and forward movement, brush carefully, being sure to carry the bristles to the gum line.

Rinse the mouth by cleansing the brush frequently with running water and brushing the teeth over again. Brush the tongue.

Have two or three brushes so that a dry one may be used each time the teeth are brushed.

Brushes so used last about two or two and a half months.

Keep the brushes well cleansed and aired.

All bone-handled brushes should be placed in cold water for six or seven hours before using them the first time.

When to Brush the Teeth.

Morning before breakfast. Brush with powder.

After luncheon. Brush with water.

Before Retiring: 1. Brush with water, or normal salt solution or powder, as the case requires.

2. Polish approximal surfaces of the teeth with ribbon floss charged with powder.

3. Rinse the mouth with clear water.

In using the ribbon floss there are three things to bear in mind, *i. e.*:

1. Keep the distance between the working ends of the fingers short (1¼ to 1½ inches apart).

2. Keep the floss tight.

3. Have a rest for one or both hands.

Answer to Question No. 2.

Yes. Calox powder or Colgate's powder mixed with sodium citrate in the proportion of two parts of the powder to one of the citrate. This is now being used in about 60 per cent. of cases after a year's trial by about thirty patients.

Contribution by John Oppie M'Call, D.D.S., Buffalo, N. Y.

First Question.

I tell my patients to brush their teeth after meals and before retiring for the night. They are to brush their teeth with a motion, not up and down, nor straight across, but a compromise between the two. The brush is moved on the tooth surfaces as though describing circles with the bristles This gets away from the objectionable straight across movement, and is easier than the so-called rolling or up and down movement. The patient is not to brush the gums, except that the gum margin should be touched by the brush sufficiently to give it a little stimulation. Such brushing will not cause irritation nor recession of the gums where the teeth have been put in proper condition by appropriate prophylactic treatment. This point must be emphasized for the benefit of the dentist as well as the laity. For the cleansing of the gums and other mucous surfaces in the mouth I prefer a rubber brush to the bristle tooth brush. The brush is supplemented by the use of a silk floss of the ribbon type. This is to be used for polishing the approximal surfaces of the teeth. Take a piece about eighteen inches in length, holding it in the two hands, so that the silk passes over the ends of the forefingers and with about an inch of free silk between the fingers. It is worked between the teeth, care being taken not to let it snap down on the gum, and is then passed in and out so as to polish both approximal surfaces. It must be carried down as far as the gum, but must not be allowed to cut into it.

Second Question.

The dentifrice must be regulated as to its abrasive power, according to the needs of the patient. A powder is always more effective in the dry condition than when made into a paste. Consequently, I very seldom recommend a paste, except where the saliva is very thin, and the teeth show evidences of tooth-brush wearing. For similar reasons I do not like more than about 10 per cent. of soap in a powder, preferably less. I have no use for medicinal agents in a dentifrice. Such agents as are needed are usually only indicated while the mouth is under treatment, and are best given in the form of mouth washes, which, of course, should be prescribed by the dentist. Here are the formulas for two powders, No. 1 being a little

more abrasive than No. 2. These can be varied to suit the needs of the patient, increasing the chalk for more abrasive action, or decreasing the chalk and increasing the soap to reduce that action.

Formulas:

TOOTH POWDER NO. 1.

Castile Soap Pulv.	Dr. 6
Sacch. Alba Pulv.	Oz. 1
Sodium Chloride Pulv.	Dr. 6
Oxide of Tin	Oz. 3
Sodium Borate	Oz. 2
Creata Precip.	Oz. 12
Oil Wintergreen	Dr. 3
Oil Peppermint	Dr. 1

TOOTH POWDER NO. 2.

Magnesium Oxide Heavy	Oz. 8
Magnesium Carbonate	Oz. 2
Creata Precip.	Oz. 12
Castile Soap Pulv.	Oz. 2
Sacch. Alba Pulv.	Dr. 1
Oil Wintergreen	Dr. 3

Third Question. I give to my patients the Rolling tooth brush, with which you are doubtless familiar, for use on the labial and buccal surfaces. On the lingual surfaces, I prefer to use a brush with a small but fairly broad clump of bristles. I am sorry I cannot send you a sample of this brush just now. It is imported from England, and the local supply has temporarily given out. Perhaps you might get one from Dr. Grace Spalding, to whom you have doubtless written. Other shapes and sizes may be used in special cases, in which the needs of the case must govern the selection.

I hope that this letter, together with the others you will receive, may result in something which will be of real benefit to the profession and the public, and assuring you that these methods have stood the test for many years.

Contribution by R. R. Johnston, D.D.S., Pittsburgh, Pa.

Query 1. In brushing the teeth, begin on the occlusal surfaces and brush mesio-distally and labio-lingually; then start with the buccal surfaces of the upper teeth on either side, holding the jaws apart; place the side of the brush against the gums, roll or rotate the brush downward, using more pressure as the teeth are reached, thus forcing the bristles between the teeth. Repeat this on the anterior teeth, then on the opposite side. Then the lower teeth are brushed in the same manner, using upward stroke. The lingual

surfaces are then brushed in the same way, that is, from the gums to the occlusal surfaces, thus not only cleaning the teeth, but massaging the gums. In most mouths, by the use of the lingual brush the patient gets better results. The thorough brushing should be done upon rising and before retiring.

Flat waxed floss is to be used after each meal if possible, care being taken to pass the floss between the teeth so that it will not snap through and cause injury.

The directions are made clear to the patient by use of a typodont. If at the next appointment I find the work not well done, I have the patient brush his teeth before me and show him how to get the desired result.

Query 2. It depends on the case. In some mouths water alone is enough; in other some mechanical cleansing agent is necessary. Then I advise the use of Calox, Kolynos, or Mogene.

In many cases the use of lime water as a mouth wash is advised, the patient being furnished with the material and directions for preparing it.

Query 3. The Rolling brush and Hutax brush, small sizes, for the occlusal, labial and buccal surfaces, and the circular brush or Hutax lingual for the lingual surfaces.

Contribution by A. C. Hamm, D.D.S., Denver, Col.

Unfortunately, there seems to be some disagreement among the specialists, but I believe that their fundamental principles are much the same.

In answer to your first question I may say that in my office I have hard bristled tooth brushes, and with one of these I demonstrate before the patient by using it on my gums and teeth, with the downward rotary motion on the gums and teeth of the upper and an upward rotary motion on those of the lower, cautioning the patient against the backward and forward use. I advise always the brushing toward the gingival margin from the mucosa, never from the coronal portion of the teeth toward the gingivæ.

I impress most emphatically the use of one brush in the morning prior to breakfasting and another in the evening before retiring, using the brush two to three minutes each time.

In regard to dentifrices I usually prescribed Pebeco, but occasionally Kolynos when the former is disliked; for a tooth powder I am partial to Calox. I try to impress upon my patients, however, that it is not what

they use on the brush that is so important, but the abrasive action of the brush itself when used in a vigorous manner.

Am enclosing under separate cover samples of three brushes which I advise my patients to use:

Small Adult Size "Rolling."

Special "Rolling."

Small Adult Size "Zel." All hard bristles.

You will note that the two larger brushes have no tufts on the ends, but taper from the heel to a shorter length at the end. The reason why I prefer this shape is because the space between the cheeks and the gums and teeth at the posterior portion of the mouth is less than at the anterior portion when the mouth is open. The Special Rolling brush is indicated on the lingual sides of the upper and lower anterior teeth and the distal surfaces of upper and lower molars.

Contribution by Andrew J. McDonagh, D.D.S., Toronto, Can.

In answer to question as to what instructions I give my patients concerning a method of cleaning their teeth, I would say when my patient is ready to be dismissed.

"I have now completed all necessary operations in your mouth, and it is your business to keep your mouth in a hygienic condition, free from all foreign material and the surface of your teeth well polished. To do this it is necessary that you use proper instruments and use them properly. There is one thing I want to impress upon you now, and that is, it takes about twenty-four hours for salivary calculus, or as you call it, tartar, to get hard and become attached to your teeth. If it is disturbed during that twenty-four hours by your tooth brush, or other instrument, it will not attach itself to your teeth; therefore, if after to-day you have a deposit of salivary calculus on your teeth, *it is your fault.*

"Brushing intelligently means brushing each tooth and brushing in such a way that the bristles will not saw grooves in your teeth, as they will do if you move your brush across the teeth; or, in other words, at right angles to the long axis. But by brushing so that the bristles sweep the surfaces of the teeth from the gum line toward the grinding surface, you will be greatly benefited if the first part of that sweep starts on the gum itself. If you will just think you are trying to *brush your gums onto yours teeth* it will facilitate matters, and you can do that better with a rotary motion than by any other way. Watch me and I will do it for you in my own mouth—(demonstration). That brushes the surface off pretty well and gives the gums massage.

On some of your teeth, just at the gingival margin, it is necessary for you to use a circular motion to reach every part; the grinding sur-

faces also must be attended to, also the surfaces next to your tongue. I am going to show you a little brush for this purpose, it is called the Lingual Hutax brush. You place it in position similar to the brush you use for the labial or outside of your teeth, that is, with the bristles pointing downward; now with your rotary motion, keeping the lips closed, because, as you will see, the brush is made for that purpose, the handle being small at the right place, you brush the whole of the lingual surface of those anterior teeth.

"After you are through brushing your teeth you may use silk tape, such as I am showing you, or silk floss, either of which you may procure at the drug store, to polish the surfaces of the teeth, which are opposite to each other and which your brush does not reach; but be exceedingly careful in placing that floss between the teeth, as it is very apt to go through suddenly and with quite sufficient force to injure the gums.

"Now, when you have performed those functions, rinse your mouth out thoroughly several times with water. Use a dentifrice three times a week (this latter instruction, of course, depends on the patient), and brush your teeth after every meal."

In some cases I prescribe massage of the gums, in some cases I do not.

You asked what brush I used and what dentifrice I used. Of couse, I use the Hutax brush, medium size, and advise it. The dentifrice I use is Hutax, either paste or powder, preferably powder. The reason I advise these, as you probably know, is that they are the product of the Canadian Oral Prophylactic Association, and all moneys obtained by the Association through their sale must go to education or charity; not one cent can be paid to any member of the Association as dividend or profits. I am sending a copy of the charter and by-laws of the Association under separate cover, and I think you will agree with me that we have it sufficiently guarded so that we cannot be accused of commercialism. We have our designs copyrighted and our Lingual Brush patented. Am sending you brushes by this mail.

Contribution by J. D. Patterson, D.D.S., Kansas City, Mo.

Question No. 1. How should the tooth brush be used? Skill and care and not force are required to secure the best results. The most effective routine is to first rinse the mouth with tepid water to wash away particles of food; next use the brush without powder to dislodge any particles remaining about the teeth, rinse again with water, and, lastly, use the brush with powder to better scour the teeth. The usual crosswise brushing often forces food into the spaces between the teeth, where it does the most harm. To remove it, the

brush should have bristles well apart and in uneven lengths. For the inner and outer surfaces the teeth should be brushed downward and upward; for the grinding surfaces backward and forward and from side to side; in this way all parts of the teeth can be cleansed from foreign matter. It should be kept in mind that the surfaces most difficult to reach are the ones requiring the greatest care. This very thorough brushing is required only once a day. It must be remembered, however, that some mouths and some teeth are more subject to disease than others and require greater care. More than usual care is required also during sickness.

The use of a quill toothpick and cutter's ribbon floss will remove food particles that cannot be dislodged with the brush. In using the silk, care must be taken not to unduly force the silk upon the gum and injure its union with the neck of the tooth. A similar injury can be caused by the improper use of the toothpick.

Question No. 2. Lyons' tooth powder.

Question No. 3. Patterson's tooth brush (sample enclosed).

Contribution by F. H. Skinner, D.D.S., Chicago, Ill.

Your letter of January 18th at hand. Will say from the start that I hardly know how to answer it. There are so many things required to keep the mouth of one patient clean and so few to get the same results in another. I make an effort to study the needs of each patient individually, and prescribe what I think his individual case requires.

The tooth brush and dental tape are necessary in all cases. I require each patient to have at least two different styles of brushes, one for the general cleaning and the other for the lingual surfaces of the anterior teeth. Brushes are to be used always with the rolling motion, placed well up on the gums and brought toward the incisal ends of the teeth, and the bristles should never be allowed to stab the gums.

The first thing I endeavor to do is to get all portions of the teeth, which are not covered with pericimental membrane, free from all foreign substances and to see that the surfaces are smooth and highly polished. If the tooth brush and dental tape do not keep a mouth clean for a reasonable length of time, I call a patient's attention to the neglected portions by placing in his hands a mirror and showing him the débris by applying the disclosing solution. If the teeth are not kept up to requirements, and by clean I mean so that there are no places on the surfaces of the teeth which can be stained with the disclosing solution, I try to find some way which will meet that patient's needs. The formula of this disclosing solution has been printed in almost all the dental journals in the country. If the places neglected are on the buccal or labial sur-

faces, they can be reached by rubbing with a wooden toothpick, but I instruct the patient never to injure the septal gum tissue, and also recommend rubbing the teeth with a small napkin or cotton roll.

The Carmi Lustro people are now getting out napkins specially made for this purpose, but I think a cotton roll held in the Kuroris holder, or a small pair of artery forceps, will do the same work, and so will a fresh cheese-cloth napkin or towel. A great many of my patients use the prophylactic polisher, wooden points and our entire outfit to keep their teeth clean, and use them intelligently, keeping their teeth in very good condition for six months or a year. Some patients do not want to bother with these things, so come in every two or four weeks to have their teeth gone over. My advise to these patients doing the best work is never to go more than three months without a prophylaxis treatment.

Regarding dentifrice, my answer would be to use that which the patient requires. Just a brush and water is all that some need. Where the gums are spongy and need massaging, something on a saponaceous order would be needed. There is a new tooth paste which has come out just lately, which may prove to be quite valuable to us.

The plaques which form on teeth are composed largely of protein matter. The active principle of this tooth paste is pepsin, with a base of acid calcium phosphate which acts as an activator to the pepsin; calcium chloride, which acts as an astringent, is also an ingredient.

Some patients, who are apparently unable to get the loose food off from the back teeth, are using a bathroom nozzle spray which was recommended by Dr. C. Edmund Kells, of New Orleans, an account of which was published in *Oral Hygiene* last year. I think this method of dislodging the loose food with a spray of water is very good.

Under separate cover I am mailing you one each of the three brushes which most of my patients use. Of course, where teeth have been ground down even with the gums, as in cases of removable bridgework, a smooth bristle brush is necessary, so as to not lacerate the free margins of the gingiva where it comes up near the ends of the teeth.

In conclusion, I will say that I have no fixed rule for handling patients, except, whenever I can, I use the disclosing solution to show unclean patches on their teeth. I let the patient see these and endeavor to find some way by which his teeth can be kept clean. I frequently have to demonstrate in my own mouth the instruments I would use and how I would use them, and also have the patient practice before me. I always tell him what he uses does not matter, so long as he keeps his teeth and gums clean and does not injure the teeth or soft tissues. The tooth brush improperly used does as much harm as it does good.

(The following is quoted from a paper read by Dr. Skinner July, 1913, and published in *Dental Cosmos,* March, 1914.)

"A patient should be taught how to handle a brush properly. The first brushing, when the brush is the stiffest and carries the first grit of powder, should be done on the masticating surface of the posterior teeth, in order to clean the fissures. A backward-and-forward and side-to-side motion should be used; then the brush should be placed well up on the gums, and with a rolling motion brought toward the occlusal surface, *i. e.,* up on the lower and down on the upper teeth on both lingual and buccal surfaces.

"In order to expose the lingual surfaces of the teeth to the brush, the tongue should be drawn well back. Frequently I give a demonstration to show the patient how to use the brush, and then have him practice before me until he uses it correctly. He should be careful never to prick the gums with the bristles, as they always carry infection. Patients commonly start brushing always in one place, usually at the gingival margins of some of the anterior teeth. This should be watched for and stopped, for the brush is always stiffer when first put into the mouth, and this, in connection with the first grit, if an abrasive is used, and applied in one place year after year, is sure to cause gum recession and to wear through the thin enamel of the gingival third.

"I prefer rather small brushes of medium texture. The lingual surfaces of anterior teeth can be brushed best with a small brush, which can be used with a rolling motion, because a brush of ordinary size bridges over the inside of the arch. The lingual surface brushes which are used as a hoe are sure to prick through and thus infect and injure the gum tissues. A brush never should be used more than once in twenty-four hours; therefore, enough brushes should be kept on hand to allow each one dry out before it is used again. The teeth and gums should be brushed after each meal. The chief good a tooth brush accomplishes is the removal of some of the loose débris and the massaging of the gums, which produces a hardened and healthy condition. But if a brush is not properly handled, it produces damage rather than benefit.

"Dental tape or floss should be used for polishing the approximal surfaces at least once a day. When putting this past the contact points, a short, tight hold should be taken of the tape, holding the buccal end a little higher than the lingual, so as to pass the contact points rather sidewise, thus keeping the tape from snapping down on the gums.

* * * * * *

"Clean mouths and clean teeth mean a higher moral, mental, and physical development, and three-quarters of the clean-mouth campaign is won when patients have become educated so as to realize that there is irritation when there is the slightest accumulation on the teeth or mucous membrane of the mouth."

Contribution by Austin F. James, D.D.S., Chicago, Ill.

I tell my patients that there is only one thing which must be done, that is to learn to intelligently massage the gums, using the brush known as the Rolling tooth brush, laying the side against the gums and with a wrist motion turning the brush, bending the bristles as they turn, so that they slide over the gums onto the teeth.

If there are any deposits, or roughened surfaces under the gum margins, this massaging will bring out a point of irritation showing where I have failed in smoothing the root surfaces. If there has been destruction of the bone supporting the gum the damage can only be repaired by making the overlying gums recede to where there is bone to support them. This can be accomplished by the brush massage described.

Secondly, I discourage the use of abrasives and so-called antiseptics. I do, however, advise the use of a pepsin preparation which will digest all mucous films.

Contribution by Paul R. Stillman, D.D.S., New York City.

Answer to Question 1.

My patients are instructed in the use of the tooth brush during the whole of the last half hour of their first appointment. The first half of the hour I devote to the removal of concretions and impacted pabulum near the gingival border. This is done with scalers. When this preliminary work of hygiene has been done, I turn to the mouth toilet articles which have been placed near at hand. I say to my patient: "I have reserved this last half hour of your appointment to instruct you as to how I wish you to care for your mouth. I wish to talk to you concerning the manner of making a mouth toilet, and to teach you how you are to use your brush and at what times of the day. Ignoring the fact that you are familiar with the use of a tooth brush, I will talk to you about its use in detail, so that any point in the technique of my method, differing from your own, may be noted."

Handing the patient a new brush and taking one in my own hand, I have the patient follow me in pantomime, explaining the technique in some such way as this: "This brush is a small scrubbing brush and should always be used with that idea in mind, the free ends of the bristles always at right angles to the surface to be cleaned, using reasonable pressure and a very short circular stroke. Scrub the crown and gums of each tooth, *'one tooth at a time.'* The bristle ends must reach all the gingival border in the mouth, both buccal and lingual. Give each tooth a half dozen short, circular strokes. *Scrub as high on the gums as the brush will go. Clean all the surfaces of all the teeth."*

The sweeping or whiskbroom method of using the tooth brush is explained and condemned as ineffective and inefficient. The long mesio-distal sweep which is used by the vast majority of the uninstructed is condemned as injurious to the buccal and labial surfaces, and wholly inadequate for the lingual surfaces.

"This technique should be systematic. Scrub the occlusal surfaces first, with a mesio-distal sweep. Then begin at the disto-buccal angle on the upper right side and scrub that and its gingiva, proceeding from tooth to tooth toward the median line. Then scrub the lingual surfaces of these same teeth. This will complete one quarter of the mouth. Let the whole mouth be brushed in this same manner."

Each patient is given a printed card instructing him to brush the teeth before breakfast, after meals and before retiring.

Until a habit in the use of the brush has been formed, I admonish a patient to concentrate the mind upon the work, bringing the will to bear, that the work may be thoroughly done, for a bad habit can only be overcome by a combined effort of the intellect and the will.

Answer to Question 2. I invariably prescribe a dentifrice and shall continue to do so. When Dr. G. V. Black told us that plain water or lime water was all that should be used, I put a large number of patients on this treatment. My results were so disappointing that I found it necessary to restore to them the dentifrice. I found that, without a dentifrice, the mouths were not kept clean, and both stains and deposits accumulated rapidly. It is my opinion that a dentifrice is as essential in cleaning the teeth, as is soap when used upon the hands. We cannot keep really clean without either.

Of the pastes I prescribe: 1. Pyrodonto Paste; 2. Euthymol Paste; 3. Kolynos Paste; in order of preference. Others are good and so are many powders. I do not dispense toilet preparations. The proprietary dentifrices whose formulæ may be had for the asking, are more carefully and cleanly made and are of better quality than those compounded at "drug stores." For this reason I do not write prescriptions for dentifrices.

Answer to Question 3. I usually prescribe the Prophylactic tooth brush, child's size (medium). This brand is sold in separate boxes or cartons and hence not unnecessarily handled before it is sold. I also prescribe the Rolling tooth brush, infant's size (medium and soft). Also the Pyorrhea Special (medium), same brand, but I always tell the patient not to "roll"

the brush and to disregard the printed directions. The child's size Rubberset is of the best quality of "tying," for the bristles do not shed, and the quality is excellent, but unfortunately it is not to be had in many stores, for some reason unknown to me.

The manner and thoroughness with which a brush is used is the important factor in oral hygiene.

Contribution by M. L. Rhein, M.D., D.D.S., New York City.

In reply to your request for my method of teaching oral sanitation to a patient, I would like to say a few words before answering. I suggest that it is fully understood that the mouth of the patient has been put in absolutely as clean a condition as possible, and that the patient reports at regular intervals to the prophylactic operator for prophylactic treatments. It is a very important duty of the prophylactic operator to note any dereliction in the proper brushing on the part of an individual patient. This would not prove anything more than a failure of the patient to fully grasp the method, or carelessness to fully follow directions. All the efforts of a prophylactic operator are valueless unless the patient fully understands and co-operates. It is surprising to discover how difficult it is to impart a simple method. It necessitates a kindergarten method of instruction to have the results effective.

Question 1. Directions for cleansing teeth given to patient. Demonstrate first with a manikin, then cross-examine the patient to be sure that he has grasped the directions. Then take the patient to the lavatory and have him brush his teeth according to directions, using brush and dentifrice, the operator watching carefully and correcting any mistakes that may occur, so that he does not get into wrong habits at the outset. (Then from time to time at other sittings the patient is questioned, and if the teeth are not properly brushed, or he is neglecting any portion of the mouth, he is given practical instructions until this can safely be omitted by the patient presenting regularly a well-brushed mouth.)

In teaching the use of the brush, a systematic method should be taught. First, with a brush of suitable character, shaped so that the bristles will divide and pass over all the portion of the tooth that is intended to be cleansed, the patient is impressed with the idea that his attention is to be given to the massaging of the gums, and the teeth will be automatically brushed. *The brush, dry and clean, is dampened and the powder is placed in the palm of the hand, or on a disk, and the brush rubbed into it.* (This is advised so that all the teeth being brushed

will get their portion of the dentifrice, and not have it all go on the first surface that is brushed and be taken off there.)

Brushing Lower Teeth. Place brush flat on the gums with the points of the bristles pointing toward the chin. With a rolling motion, the brush is rotated by means of the wrist, so that, as the bristles reach the teeth, they are turned with their points toward the interproximal spaces of the teeth, and as the brush slides toward the morsal surfaces the bristles spread with fan-like shape over the entire buccal surfaces of the molars. This brushing is done in front of a mirror, so that the entire proceeding can be carefully watched. The lower jaw, on the outside, is divided into five different portions for attention. The molar region, right and left, the bicuspids and canines, right and left, and the lower incisors.

Brushing Upper Teeth. For the outside of the upper, the same manner of brushing is pursued, with the exception that the points of the bristles point upward. The five surfaces are brushed slowly, not once, but as many times as is necessary to remove every bit of débris, being sure that the brush is in the right position before starting to rotate it.

Lingual Surfaces. On the lingual surfaces the same manner of brushing is followed, with the exception of the incisors, which cannot be thoroughly brushed in this manner. Here, in addition to the rolling motion, the tuft at the end of the brush is employed, spreading the bristles in a fan-like shape over the gum below the necks of the teeth and drawing them in the manner of a hoe straight up over the incisal edge.

Morsal Surfaces. On the morsal and incisal edges of the teeth the little tuft of bristles is again used, but in brushing these surfaces the patient is warned against spreading the bristles, which may result in the gums being brushed in an improper manner. With so many surfaces of the teeth to brush, and brush carefully, the patient needs at least five minutes at each brushing. The teeth should be brushed every time after eating—after breakfast, after luncheon, and after dinner, or immediately before retiring, and each time using the dentifrice.

It is well to vary the starting place in brushing the teeth; first lower right, next time lower left, again upper right, and so on. The efficiency of the bristles is always greatest at the start, and by varying the starting place, every portion of the mouth will receive the same attention. If for any reason some particular place requires especial care, this should receive the first brushing.

Rotary Motion Condemned.

Every effort is made to guard against the so-called rotary motion of the tooth brush, because both from clinical experience and theoretically it is considered a dangerous method. Where no infections result, no harm is done, but every precaution should be taken against the points of the bristles coming into direct contact with the soft tissues. While it is admitted that with considerable skill there may be no puncturing of the gums, nevertheless the ease with which infections occur in the mouths of patients, where immunity is lacking, through brushing in this manner speaks against teaching this as a method. The fact that the gums can be pierced with impunity, and may even become semi-infected, as it were, without serious results, in the mouths of children where there is a well-established zone of immunity, is alone responsible for the use of this method. At the period in life, however, where infection is a serious matter, habits of this kind are fraught with more or less danger from infection attending their use.

When and How to Use Floss Silk.

In mouths where contact points of the teeth are normal, nothing is required beyond the above described brushing, but as soon as the contact points are not normal, it is difficult to keep the approximal spaces clean. The operator, using judgment, recommends the proper use of waxed dental floss. In teaching the use of floss, importance is laid on the fact that the floss, in passing through the contact point and into the interproximal space, *should cling to one tooth,* hugging the side of the tooth down one side, and should then be carefully taken over to the adjacent tooth, and clinging to the side of that tooth on the way up. By this means the gum will not be wounded. Improper use of the floss may cause the same kind of infection as that produced by the ends of the bristles in improper brushing.

Mouth Washes.

Mouth washes are sometimes recommended, never, however, for any supposed medicinal action which they might have, but merely as a pleasing toilet adjunct. Any mouth wash that has any distinct potential therapeutic value in the cure of diseased tissue becomes a very dangerous agent in the hands of the patient.

Question 2.

"Do you recommend dentifrices of any kind, and if so, what?" The theory of cleansing the enamel surfaces of the teeth from the newly plastered micro-organisms stuck fast to the enamel with mucin, but invisible to the human eye, should be the same as used by the *haus-frau* when she covers her wooden floor with sawdust, sprinkles it with water, and then

takes her broom and carefully sweeps it into a receptacle. She depends upon the moistened sawdust to carry with it the particles of dirt and at the same time to repolish the places which she is sweeping. The dentifrice takes the place of the sawdust, and its object should be practically the same. For this purpose, it is important that nothing of an insoluble nature should be used, and only the simplest medicinal agents, which should be so thoroughly diluted as to have no distinctive potential therapeutic value. If the dentist for any reason desires the patient to use locally some medicinal agent, it should be given as a separate prescription, with all the details of length of time that the prescription should be kept up. There can be no more dangerous custom than the effort to incorporate remedial agents in a dentifrice. The essence of a dentifrice should be truly prophylactic, and this presupposes a healthy mouth. The insolubility of tooth paste makes it not only less valuable than tooth powder, but in some mouths very undesirable. The tooth paste, however, has become the fashionable dentifrice because of the fact that it is more easily handled, is more attractive to the user and more profitable to the manufacturer if the same quality of materials are used. Any one of the materials in a dentifrice should be of such a nature and quality that it can be swallowed in unlimited quantities without producing any injurious effect. In considering the subject of a dentifrice, it must be at once understood that nearly every constituent that enters into its composition can be found on the market in various degrees of purity, perfection and quality. The price of any of these materials varies according to the quality that is purchased. This variation in quality makes *the prescribing of a suitable powder a practical impossibility*. It also renders unsafe the use of the average dentifrice unless the individual has a distinct assurance of the nature of the product that he is purchasing. Even then he must have additional assurance as to the integrity of the manufacturer in furnishing only the highest quality grades of the ingredients utilized. It is on this account that the writer for over thirty years has had the manufacture of tooth powder used by his patients under his own personal supervision in his own special tooth powder laboratory, which is entirely devoted to this purpose. Every ingredient passes a specified examination before it is accepted. The formula of any given dentifrice is not of so very great importance if the ingredients used are of the highest quality, and no powerful medicinal agent is employed. The criticism cannot be too strong against the dentrifrice in which is incorporated a medicinal agent which will accomplish a definite purpose. The distinction must be clearly drawn between the object of a correct dentifrice and a therapeutic prescription.

Question 3.

"The specimen of brush which I think most desirable." It would, indeed, be a splendid thing for mouth hygiene if it would be possible for me to send the Editor of the ITEMS OF INTEREST a brush such as I think most desirable. Although I have spent considerable time and money on this subject, the correct brush has not yet been manufactured. This statement is made advisedly after the most careful examination of every form of brush that has been exploited and which was possible to obtain.

In 1883 I introduced the Prophylactic Tooth Brush to the profession, and while recognizing its numerous defects, if this brush were properly made, according to my specifications, it is to-day the best brush that can be found for cleansing the teeth. It is a fact, however, that all bristle brushes are difficult to make *correctly* in large quantities. Only a small proportion of them can be made in the ideal shape that they should have, and the remaining lot are the poor makeshift that "seconds" always are. If any tooth brush is made with the greatest care, to give the desired results it is of the utmost importance that the handle should be as rigid as possible. In opposition to this there has been introduced by several manufacturers a flexible handle of celluloid, which entirely destroys all the merit which the brush may possess. The difficulty of obtaining sufficient quantities of bone in the proper shape is the only reason for the utilization of the flexible handle. The prophylactic brush ceases to be a type of *"The Prophylactic"* tooth brush which I designed when it fails to have a rigid handle with the proper curvature. Whatever tooth brush is used, several things are necessary to make that tooth brush a really efficient tool.

The individual should always have a sufficient number of absolutely clean brushes in use. A brush in which the bristles remain limpid from not being thoroughly dried is valueless until the bristles have regained their normal elasticity after being thoroughly dried. It is useless to take all the time and care for correct brushing if the bristles fail to have the required amount of elasticity. The great value of the hole in the handle consists in permitting the brush to be suspended in such a way that every portion of the bristles in sight is surrounded by a current of air, and by virtue of this the bristles are dried much more quickly than by any other method. Each tooth brush should be used but once a day. The breakfast brush should not be used again until after breakfast the next day, and so with the other brushes.

Cleansing the Brush.

After using the brush it must be *thoroughly cleansed* before hanging up to dry. This cleansing must not be perfunctory, but of the most thorough nature. It is wise to have reserve brushes suspended

over the wash basin; it may happen that the brush selected fails to respond to the proper test, and is not doing its full duty. It should at once be discarded and one of the reserve brushes substituted.

There are exceptional mouths that frequently require special direction and care in order to enable the individual to keep the different surfaces of the teeth properly cleansed and polished. It is impossible to close this statement without referring to the great amount of damage that is done by individuals who attempt too often, under professional advice, to supplement directions of this kind by more rigorous activity, which should only be performed by the prophylactic operator. Port polishing holders, for which points and instruments have been devised for the use of patients, are to be especially condemned. Criticism against anything of this nature cannot be made too strong.

Mouth Hygiene Directions.

By Jules J. Sarrazin, D.D.S., New Orleans.

Many systemic disturbances find their origin in infectious bacterial films not properly removed from necks of teeth. Nothing short of approximal polishing floss tape and *dry* powder with an active, smooth, polishing grit, on *dry* stiff bristles, will thoroughly break up such films and develop the polish on tooth structure which protects against their adherence. Dry bristles alone are, in comparison, ineffective, and soap in a paste deludes by lubricating them. Grooves are worn at gingival lines by crosswise, horizontal brushing; not otherwise Resting on these fundamental facts, *directions to suit their respective mouth conditions* are given Mr. and Mrs. John Doe by plain words illustrated with objects and photographs, they being made at the same time to realize the *protective training* which they owe their *children. Patients carry out instructions* better *if* they are made to thoroughly *understand* their foundations and *far-reaching importance.*

To Mr. and Mrs. John Doe:

"Cavities in teeth are formed as a result of food remnants allowed to remain between teeth and in their depressions (Figs. 1 and 2). The greatest harm is done during sleep, while the mouth is at rest, but fermentation and decomposition of food remnants start within two hours after eating, unless proper mouth cleansing is done after meals, besides doing it at bedtime. Cavities thus started hold infectious germs dangerous to health. Food then becomes contaminated by the very act of chewing it. Teeth are destroyed until abscesses result which infect the blood circulating around their roots. You and your children should never re-

tire without having thoroughly cleansed your mouth according to directions. Additional cleansings increase in importance according to the number of hours before bedtime. After-breakfast mouth hygiene is therefore the next necessity, while an afternoon repetition of it is exceedingly desirable.

"Mrs. Doe's mouth shows a moderately advanced condition of Riggs' disease. (Fig. 3 shows advanced stage of Riggs' disease.) It is simply

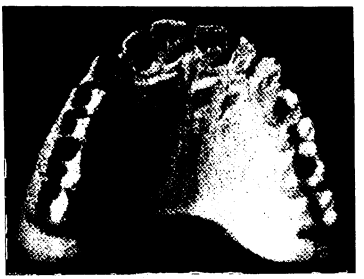

Fig. 1.

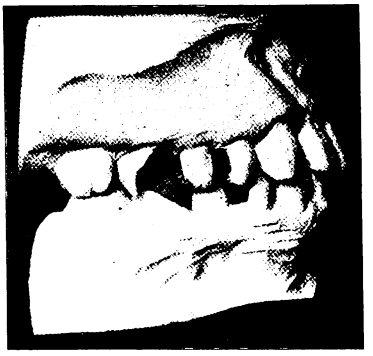

Fig. 2.

Fig. 3.

a question of time for it to reach a desperate phase unless conditions are now completely changed, and she conscientiously helps so doing. As adjuncts to dental chair treatment she needs the germicidal, astringent, pus solvent and alterative properties in Vident No. 6 Mouth Wash; the abrasive remedial effect in Vident No. 4 Powder; and Vident Polishing Floss Tape No. 9, because her teeth have lengthened, due to the loss of gums resulting from the diseased condition. I am partial to Vident preparations because the different ones supply the properties needed in various conditions, and because, being made from my own formulæ, the constituents of which appear on packages, I know exactly what effects to expect from them, if properly used according to directions. If the

diseased condition in Mrs. Doe's mouth is not corrected locally, and the systemic effects remedied which already begin to show as a result of the infection which her blood is taking therefrom, we may expect morbid developments to follow gradually, such as are mentioned in the list displayed (Fig. 4).

"Of course, this is of still greater importance than the preservation of her teeth. Her health could be safeguarded by sacrificing her teeth, or

FREQUENT RESULTS OF ORAL INFECTION:

By CONTIGUITY: Pharyngitis, Glossitis, Tonsilitis.

By MOISTURE GLOBULES { Laryngitis, Bronchitis, Bronchial Catarrh.

By INGESTA { Gastritis, Septic Gastritis, Gastric Erosions and Ulcers, Diarrhea, Intestional Toxemia, Appendicitis.

By CIRCULATION { Arthritis Rheumatoid and Deformans, Gout, Rheumatic Fever Anemia, Septic and Pernicious Anemia, Lowered Systemic Resistance to all forms of Infections, Neurasthenia, Bright's Disease, Abscessed Liver, Infectious Endocarditis, Cerebro-Spinal Disturbances, Cerebral Venous Congestions, Cerebellum Affected, Death.

Fig. 4.

most of them, but it is still possible to save both, provided that she will faithfully co-operate by proper home mouth hygiene treatment, which we will presently plan out to suit the whole family, backed by such special preparations as individual conditions require. In her case, in addition to general directions to suit everybody, she must practice gum massage at least every three hours, pressing the gums in the directions shown by arrows (Fig. 5), so as to repulse toward the heart the surface blood already infected by septic matter in the sockets, and allow the tissues being fed by arterial blood from beneath. This applies to both jaws, throughout, and at least five minutes should be devoted to each. Ultimately, as far as the teeth themselves are concerned, whether in young, old or diseased mouths, proper care must polish them until they become lustrous (Fig. 6) in between them as well as on their visible aspects, so that deposits of no kind tend to adhere to them anywhere, and still more especially at gum lines. This constitutes the prevention of caries and Riggs' disease.

"In your mouth, Mr. Doe, we must correct the effect of carbon stains from smoking and the resulting irritation to mucous membranes. Vident Powder No. 3 will take care of stains and supply the polishing, provided that you use it *dry,* as all powders should be used. Vident Mouth Wash

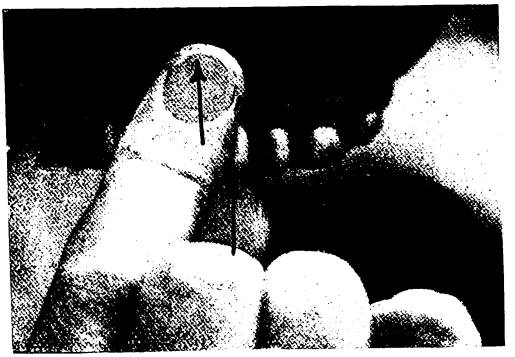

Fig. 5.

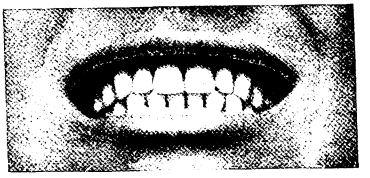

Fig. 6.

Fig. 7.

No. 5 will tone the gum tissue, and, as your teeth are not too long, you will polish between them with Vident No. 8 Polishing Floss Tape.

"Ethel, who is five, should begin using *dry* powder on a *dry* brush, but she needs no more active polisher than Vident No. 2 Powder, and she must use Polishing Floss Tape No. 7, which is narrower. Other-

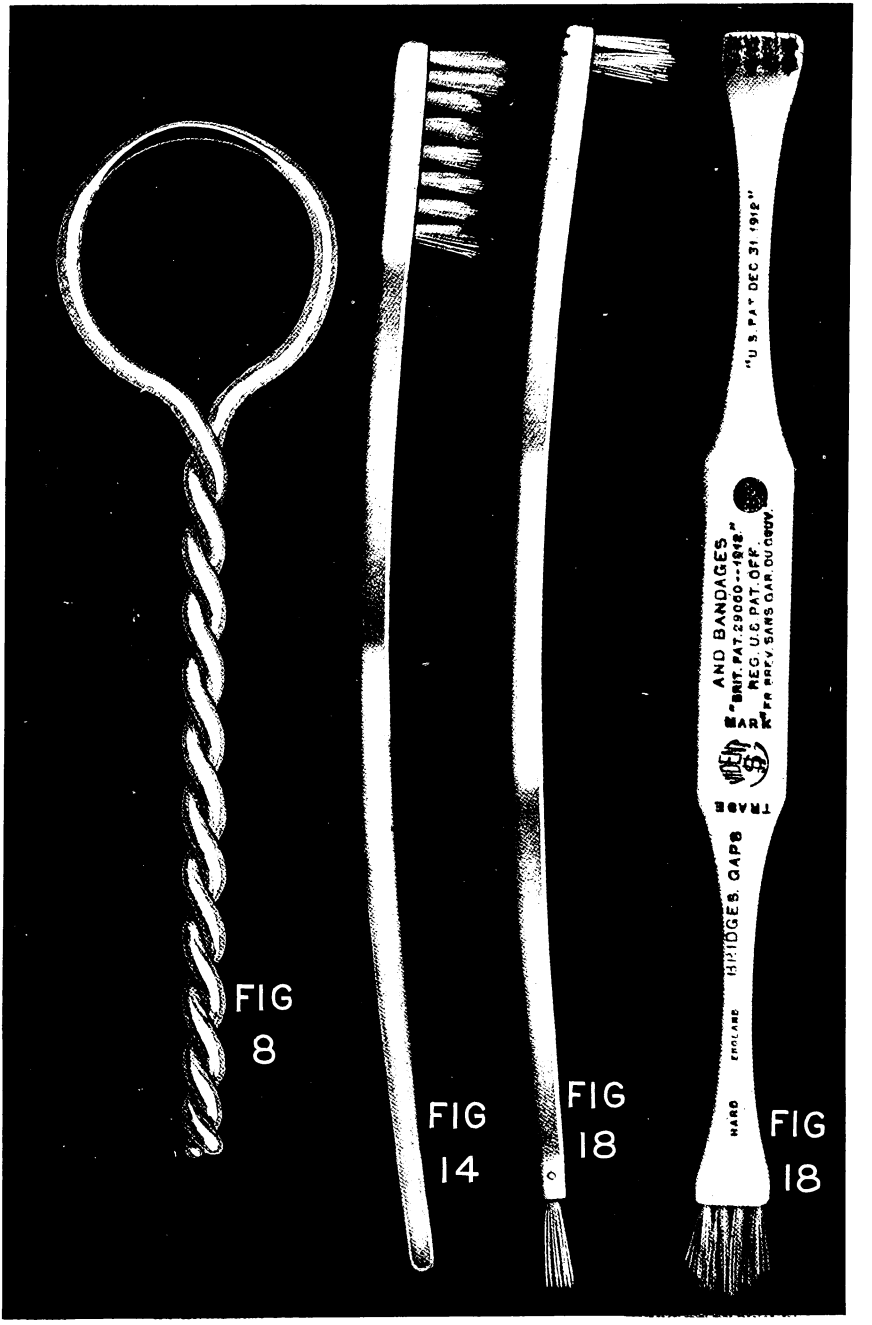
FIG 8
FIG 14
FIG 18
FIG 18
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wise, all the general mouth hygiene directions we are coming to apply to her also.

"The training of little Sam, who is two years old, must now be started, but with No. 1 Vident Paste, which contains no soap to prevent polishing; his mother will have to use this on a double end brush, the hoe end of which must be cut shorter for him, and the small extremities of which will not crowd his mouth. He would choke on a powder. Gradually, by letting him imitate the whole family at floss tape rubbing, he will grow into that proper habit.

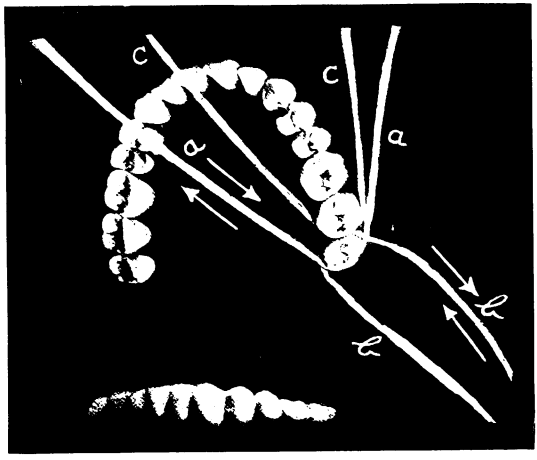


Fig. 9.

"For the new baby, as each tooth emerges, keep it cleansed with an eye brow brush three times a day. Temporary teeth must absolutely be preserved in good condition, else the development of the child suffers both locally and systemically, and later, permanent teeth become seriously impaired and prone to caries, irregularities, and, in adult life, Riggs' disease also results.

Technique of Thorough Hygiene.

"Now that the special conditions in each mouth are provided for, we will take up the thorough technique of proper mouth hygiene. The first step is to thoroughly cleanse the back of the tongue, near its root, from filmy deposits, which would otherwise reinfect the mouth within a few minutes after the mouth toilet (Fig. 7). In so doing the tongue usually furrows down in the centre, and this is overcome by then scraping with the polished, blunt, rounder lip of the tongue cleanser (Fig. 8, page 345, cleanser, full size). Tendency to gag is corrected by drawing the tongue out by its tip; taking a deep breath

at the same time. The children need not use a tongue cleanser until they are ten years old.

Use of Tape Floss.

"Next, floss polishing tape must be thoroughly rubbed against the neck of each tooth in the mouth, on its front and back; *not merely passing it* between the teeth. This is difficult and demands very *special*

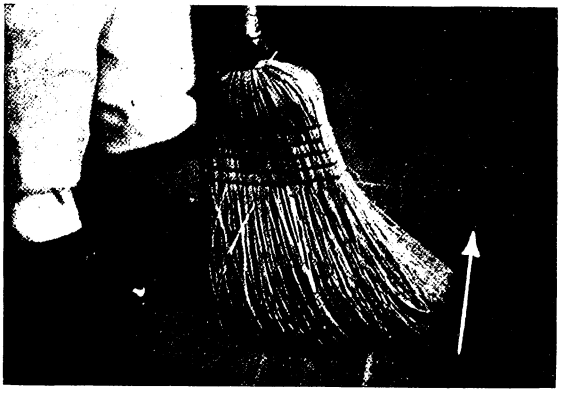


Fig. 10.

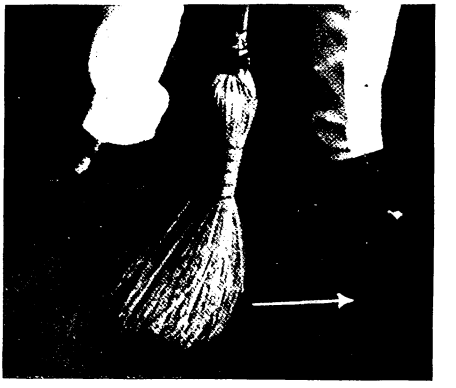


Fig. 11.

care on the *front* of *all back* teeth, both above and below; otherwise the spots become starting points of infection and disease. At those places the floss polishing tape must be tightly wrapped on the tip of one index finger, only three quarters of an inch of it being stretched out by the other forefinger, so that the front of a rear molar can be encircled and properly polished. (Fig. 9 shows use of tape. Similar letters mark two ends of same tape, and arrows indicate direction of movement back and

forth when using.) For rubbing into depressions at the front necks of some of her molar teeth, which I will point out to her, Mrs. Doe will have to tie knots in her floss polishing tape. Rub still more against teeth which stand next to empty spaces, because they otherwise accumulate more septic filth than others; it is readily pushed thereon in chewing, and by the tongue and cheeks. Polishing floss tape must be entered

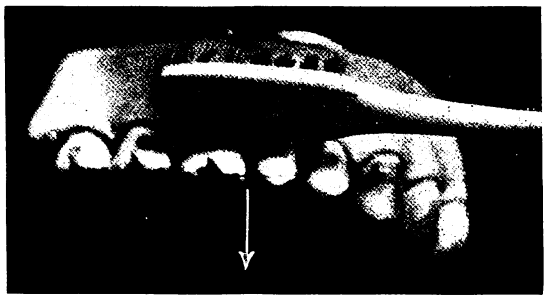


Fig. 12 A (Proper Brush Motion).

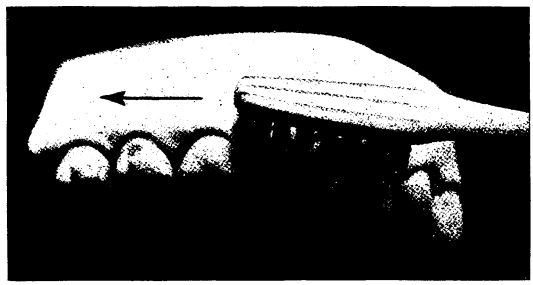


Fig. 12 B (Harmful Brush Motion).

between teeth by a sliding motion until it merely touches the gums, and it must be rubbed separately against each tooth, but not into the gums, which it may, however, touch in so doing. The object is to polish the necks of the teeth, between them.

Use of Tooth Brush.

"If Mrs. Doe's house girl went on a holiday for a week, she might have to sweep some flooring. She would surely do so with the length of the boards, to remove all the dirt possible (Fig. 10), and not across them to pack it into interspaces (Fig. 11).

"Likewise, in brushing teeth, bristles must move from far on the gums to biting surfaces of the teeth (Figs. 12A and B). In so doing venous blood circulation in the gums is stimulated, while the interspaces between

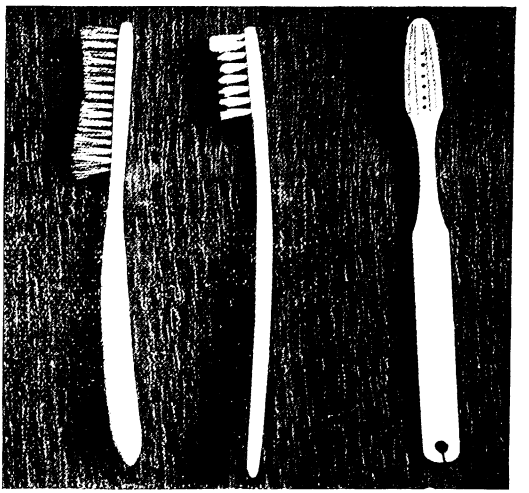


Fig. 13.

teeth are reached as far as bristles can do so, crowning no septic filth therein instead of removing it. It requires the fingers moving as already explained to message gums, but stimulation by the brush gives some help. Proper vertical motion of bristles from the roots of teeth to biting surface must be done *inside* as well as *outside* the teeth, *above* and *below*,

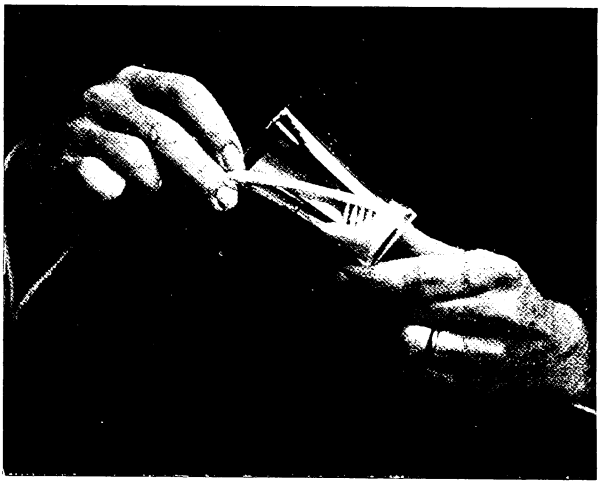


Fig. 15.

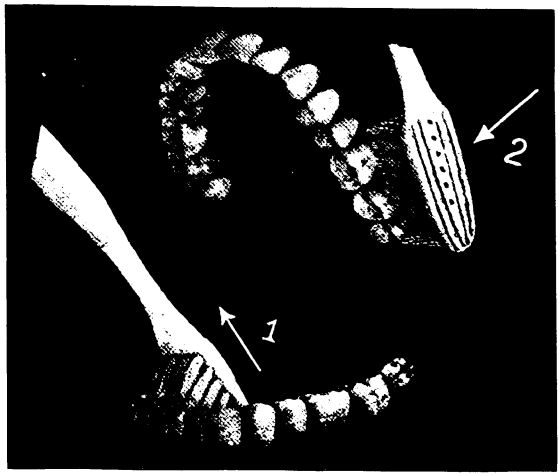


Fig. 16 A.

front and *rear*. What is more, *improper, crosswise,* horizontal brushing has three harmful effects: It crowds disease-causing material between teeth; it irritates and pushes away the gums; it wears grooves into the teeth.

"A nail brush moves freely in a wash bowl, but a tooth brush somewhat resembling the former in general size and shape crowds the mouth so as to prevent proper motion of bristles. (Fig. 13 shows proportionate

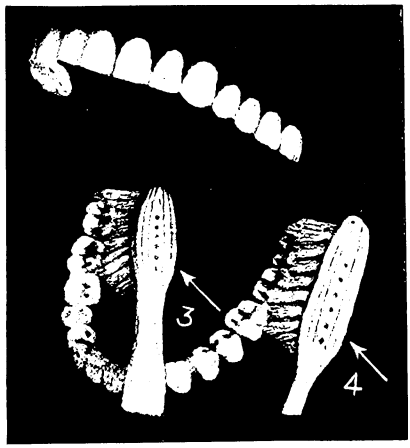


Fig. 16 B.

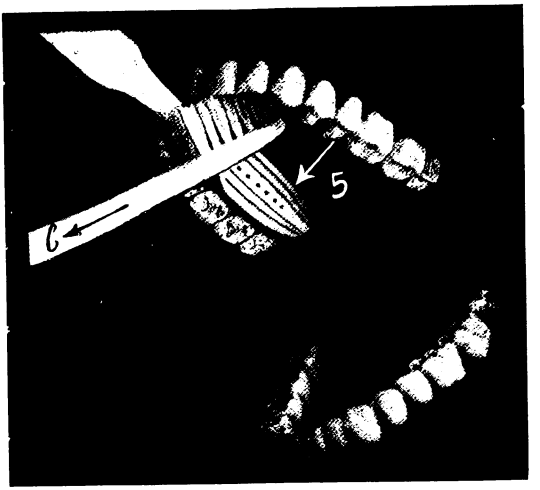


Fig. 16 C.

difference in size between the nail brush style of tooth brush, and the Vident tooth brush. Fig. 14, page 345, shows actual size of brush.) The larger brush is a useless tool, defective in every particular, calculated to delude its user with the idea that bristles act because they crowd. It might clean flat silverware. A narrow brush head, no longer than one and one-eighth inches, with rows well spaced apart, also adapts itself to

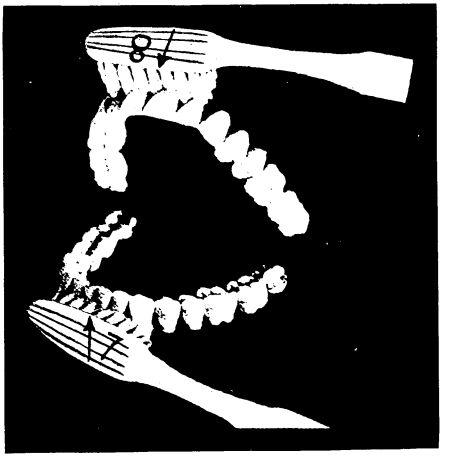


Fig. 16 D.

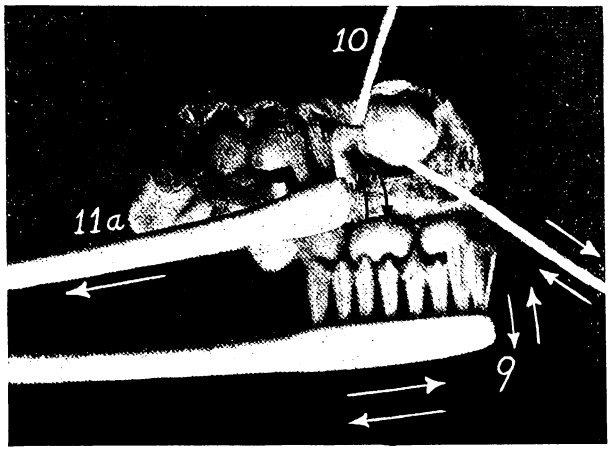


Fig. 16 E.

the tongue side of teeth, inside the lower molars and elsewhere, as well as behind molars on their cheek side, both above and below. The long extremity cluster must always be well felt on the gums behind all rearmost molars. Except to tighten its bristles as first put to use, never wet your brush until you are through with it. Then, most thoroughly rinse all powder out of it.

"While brushing your gums and teeth, wipe the brush every time it becomes wet by saliva, and, each time, charge it with a quantity of *dry* powder from a small glass held slantingly (Fig. 15).

"There are places where brushing should be started while bristles are at their best after drying. Therefore, do different places in the order

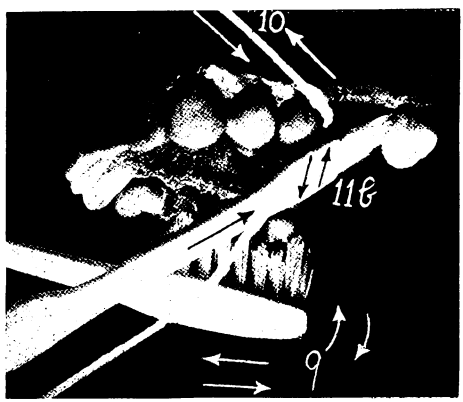


Fig. 16 F.

shown, and with the motions of bristles illustrated, repeating them on each side of the mouth, and every time with a heavy, fresh charge of powder (Fig. 16).

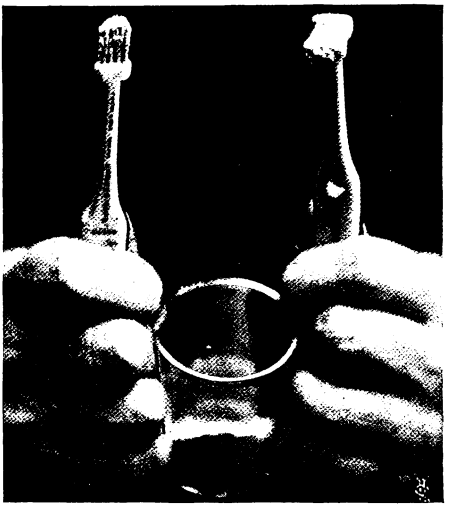


Fig. 17.

Fig. 19.

"No special attention need be given the cuspid regions, above, below, in and out, because the neighboring motions of bristles will readily bring them there. All that is necessary is to repeat fresh charges of *dry* powder in these localities, as elsewhere throughout the mouth. Finally, with still another charge of powder for each place on both sides, above and below, brush the chewing surfaces of molars as shown (arrows 9).

"No places are as treacherous for harboring disease germs as the necks of teeth next to empty spaces and beneath bridges. You could not be induced to eat with a fork displaying a small fraction of the septic

filth usually found there. The necks of teeth next to the empty space in Mr. Doe's mouth require special polishing floss tape rubbing and heavy charges of powder on each end of the double end brush in turn (Fig. 17. In Fig. 18, page 345, is seen Vident Double End Brush, actual size), as shown by black and white arrows 11a and 11b.

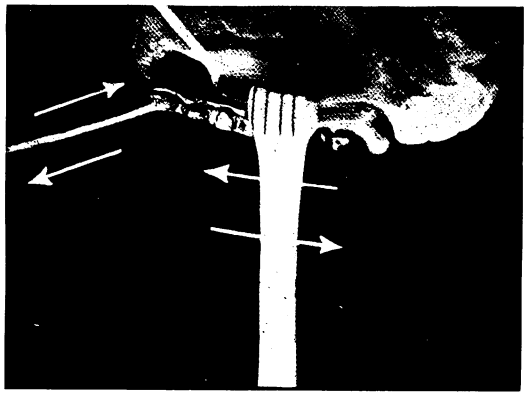


Fig. 20.

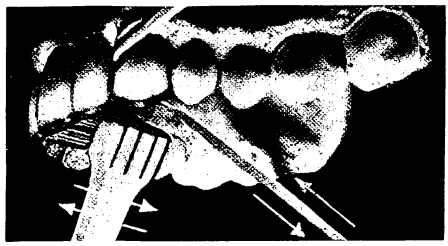


Fig. 21.

Care of Bridge-Work.

"His right, lower bridge must also be cleansed as his left, upper empty space, in every particular, making especially sure that the polishing floss tape is threaded beneath the bridge, and thoroughly rubs against the crowns at both ends of it, and where the straight end of the double end brush is applied, use special pains (Fig. 19).

"Mrs. Doe's left, upper bridge requires identical vigilance throughout; tape rubbed beneath it and carefully against both extremities; increasing care against the rear crown, charging powder generously on both ends of the double end brush to work against each crown successively (Fig. 20). Mrs. Doe must also do thorough work beneath her upper, front bridge (Fig. 21). Difficulty thereat is increased because the span teeth

rest on the gums. She must thread the polishing floss tape as shown, thoroughly rub against one crown, rub beneath all span teeth, reach the opposite crown, and rub thereon also. Afterwards, heavily charge the hoe end of the double end brush with *dry* powder, and polish the gold surfaces next to the gums, reaching the end crowns carefully.

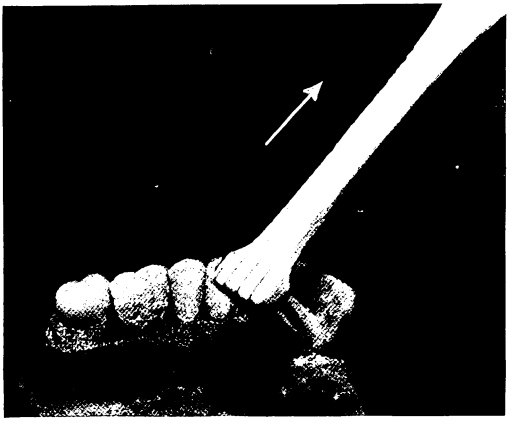


Fig. 22.

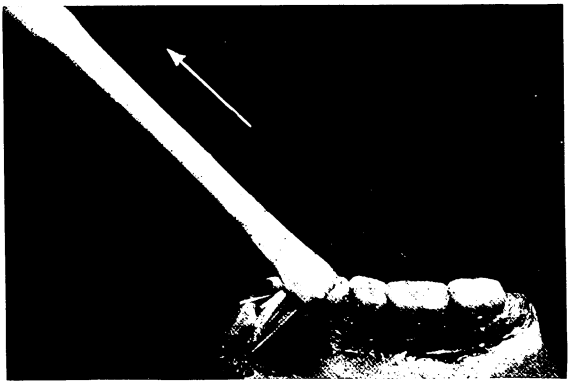


Fig. 23.

"When lower, front teeth are long, like Mrs. Doe's (Fig. 22), and still more, when they recline toward the tongue like Mr. Doe's (Fig. 23), even the short narrow head brush tends to ride over the edges of the lower front teeth and the gums under the tongue, completely failing to break up deposits which rapidly form at teeth necks. Make use there of the hoe end of the double end brush, charged with *dry* powder a couple of times.

"By the way, when a regulating appliance is put in Ethel's mouth, she will be obliged, as an additional adjunct, to use both ends of the double end brush, well charged with *dry* powder, reaching the teeth everywhere inside of all wires.

Use of Mouth Wash.

"The last step in mouth hygiene consists in flushing out the tiniest particles loosened and floating about with a mouth wash properly suited to special conditions. Use it no stronger than twenty per cent. in water. Force it vigorously in every direction with tongue and cheeks for two minutes; finish by gargling.

"To protect your teeth, your gums and yourself against disease, it is a question of ever breaking away and removing the slightest infectious film which may be developing anywhere in your mouth, and maintaining a perfect polish on all the different surfaces of your teeth. Beneficial results accrue in direct proportion, both locally and systemically. We shall frequently make use at the chair of a germicidal staining solution to reveal the slightest spot where your efforts need to be directed with special care in addition to the general technique of mouth hygiene just explained."

Instructions for the Home Care of the Mouth.

By Alfred C. Fones, D.D.S., Bridgeport, Conn.

It is possible to remove all of the food débris from the teeth if the following details are carefully observed:

First—Brush the teeth with clear water upon rising in the morning, and after each meal with a dentifrice.

Second—Follow the brushing after meals with the use of floss silk in all inter-tooth spaces.

Third—Complete each cleansing by rinsing the mouth thoroughly with lime water.

How to Brush the Teeth and Gums.

The mouth should be cleansed in four sections:

First—The outside surfaces of the teeth and gums of both the upper and lower jaws.

Second—The inside surfaces of the lower teeth and gums.

Third—The inside surfaces of the upper teeth, the gums, and the roof of the mouth.

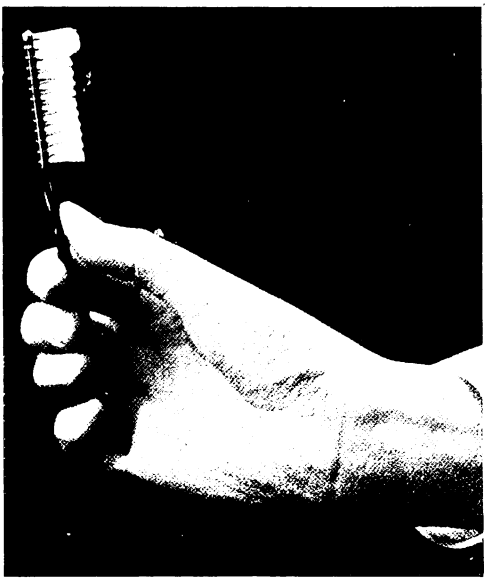


Fig. 1.

Hold of brush for left side.

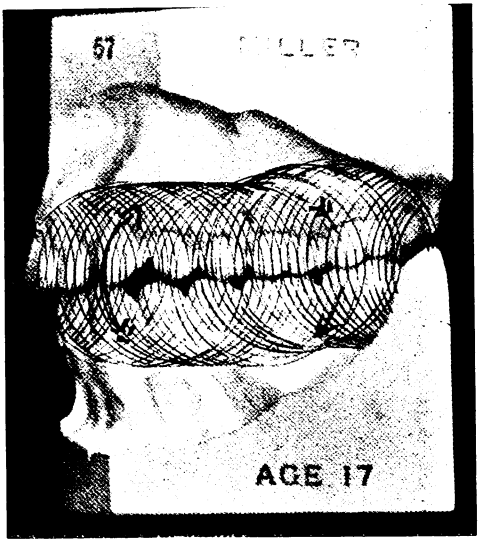
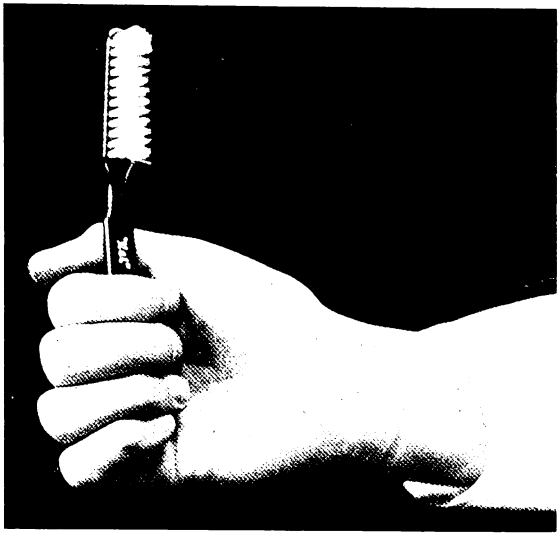


Fig. 2.

Showing circular motion given brush on left side and in front on teeth and gums.



Hold of brush for right side in brushing outside surfaces of teeth.

Fig. 3.

Circles in which brush should travel on right side.

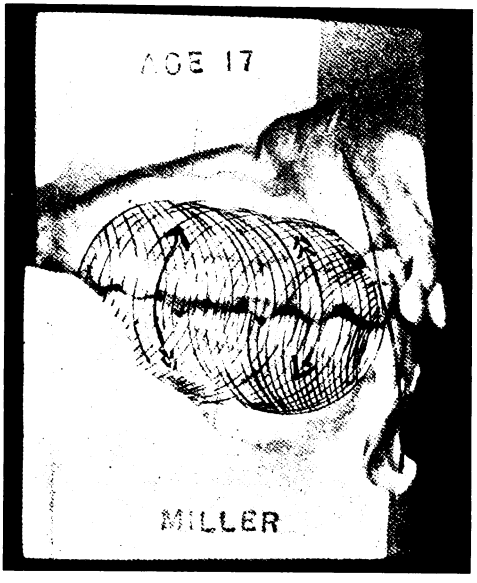


Fig. 4.

Fig. 5.

Hold of brush for inside surfaces of lower teeth and gums

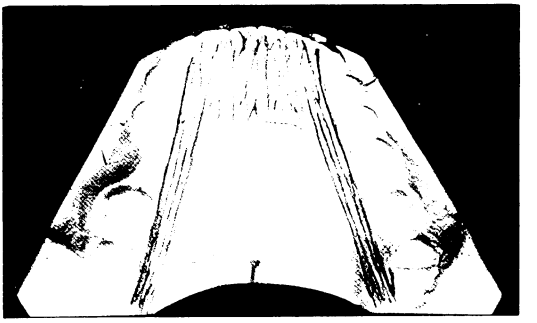


Fig. 6.

Lines indicating the direction brush should travel.

Fig. 7.

Hold of brush for inside surfaces of upper teeth and roof of mouth.

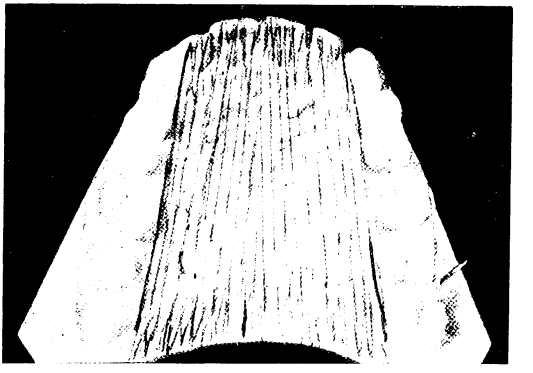


Fig. 8.

Lines indicating the direction brush should travel.

Detailed Instructions for each Section.

First—The outside surfaces of the teeth and gums.

Place the toothbrush inside the *left* cheek and on the upper gums, well back in the mouth. Nearly close the teeth, moving the lower jaw forward if this is necessary to make the front teeth meet. Hold the brush as shown in Fig. 1.

Make the brush go backward and downward to the lower gums, then slightly forward and upward until it has traveled a complete circle. This circular motion should be a light, rapid one and continued forward until all the teeth on the left side and front have been brushed. (Fig. 2.)

Do not brush the teeth or gums crosswise.

Then change the grip on the brush to that shown in Fig. 3.

Brush the outside surfaces of the teeth and gums of the right side using the same circular motion, reversing the direction of the circle if this is found more convenient. (Fig. 4.) Brush long enough to thoroughly stimulate the gums and cleanse the teeth, going back and forth over all these surfaces several times.

Second—The inside surfaces of the lower teeth and gums.

With the same hold on the brush as for the right side, outside surfaces (Figs. 3 and 5), brush the inside surfaces of the lower teeth and the gums with an in-and-out stroke (Fig. 6), using chiefly the tuft end or toe of the brush. It will be noted that it is easy to reach the left side, but for the front and right side the wrist must be bent downward at a sharp angle, similar to the position of the bow hand of a violinist, and the elbow raised. Be sure to reach back in the mouth on the gums below the last tooth on both sides and also to brush the gums back of the lower front teeth.

Third—The inside surfaces of the upper teeth, the gums, and roof of the mouth.

With the bristles of the brush pointing upward and the end of the thumb on the back of the handle (Fig. 7) brush the roof of the mouth and the inside surfaces of the teeth of the upper jaw and the gums about them with a fast, light, in-and-out stroke (Fig. 8), reaching back on the gums as far as you can go. Go back and forth across the roof of the mouth at least four times.

Fourth—The chewing surfaces of the teeth and the posterior ends of the arches, upper and lower.

Holding the brush as is most convenient, brush the grinding surfaces of first the upper and then the lower teeth, using the in-and-out motion.

Lastly, with a sweeping motion, cleanse the teeth at the ends of the upper and lower arches (the last molars) and the gums about them.

After brushing, the mouth should be examined with the aid of a hand mirror, pulling the lips away from the teeth, and if any food is found, brushing should be continued until it has been removed.

Either a powder or a paste may be used on the brush.

Brushing must be continued for at least two minutes. This means two minutes *by the clock.*

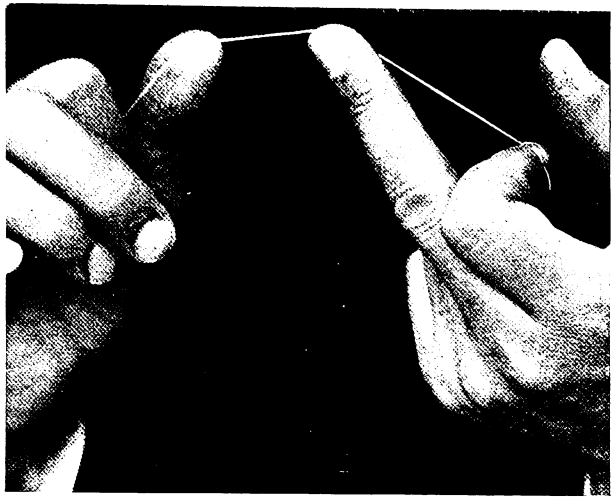


Fig. 9.
Hold of floss for right upper teeth

Do not use pressure with the brush.

Get a new tooth brush frequently. Notice that these are specially cut brushes and should be duplicated.

Candies, sugar, cake, pastries, crackers and bread are especially apt to decay the teeth if allowed to remain on their surfaces.

How to Use the Floss Silk.

There is but one way that is effective in removing the food from between the teeth and that is with a piece of floss silk or dental floss, as it is called.

Use a section of floss about twelve inches long. Hold one end between the thumb and first finger of the left hand and wrap the floss twice around the end of the first finger. Do the same with the thumb and first finger of the right hand. Now by using combinations of the ends of the thumbs and second fingers (Figs. 9, 10 and 11), the floss

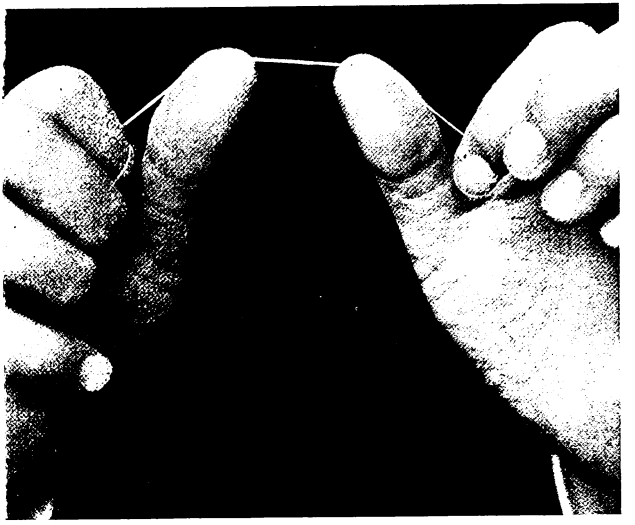


Fig. 10.
Hold of floss for left upper teeth

Fig. 11.
Hold of floss for lower teeth

may be carried into the mouth and forced carefully between all the teeth, care being exercised not to injure the gum in so doing. Rub it back and forth against the surfaces of each tooth to loosen and remove the food to clean these surfaces. After a little practice one can floss all the surfaces between the teeth in a very short time.

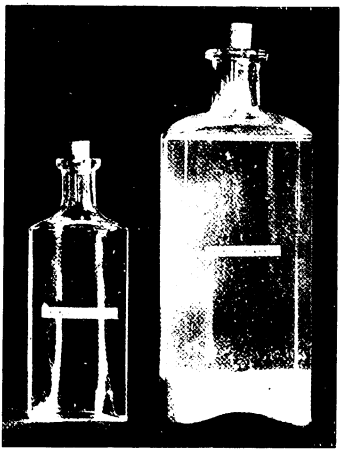


Fig. 12.

Lime water bottles

The Use of Lime Water.

Lime water is very important and is advocated for two purposes: First—to wash away food débris, and Second—to dissolve a glue-like deposit from off the teeth. This is called mucin and is the material that protects the germs that are active in food fermentation.

How to Make Lime Water.

Secure from a paint store five cents worth of coarse, unslacked lime and crush it into a fine powder. The refined lime that the druggists sell does not seem to have the same solvent action.

Place a half cupful of the powdered lime in a quart bottle and fill nearly full with cold water. Thoroughly shake and then allow the undissolved lime to settle at the bottom of the bottle, which will require several hours (Fig. 12).

After the lime has settled, pour down the sink as much of the clear water as you can without losing any of the lime. This water is

poured off because it contains the washings of the lime and is not pure enough to be used.

Again fill the bottle with cold water, shake well and allow the solution to clear itself. After the lime has again collected at the bottom of the bottle fill a twelve-ounce bottle with the clear solution of lime water, being careful not to stir up the lime at the bottom. The twelve-ounce bottle is used as it is easier to handle at the wash bowl. Refill the large bottle with cold water, shake well and set it aside to use when the smaller bottle has been emptied. This process may be repeated until all the original half cupful of lime has been completely dissolved.

How to Use the Lime Water.

After brushing and flossing the teeth, pour out a little of the lime water into a glass and, taking it in the mouth, force it back and forth between the teeth with the tongue and cheeks until it foams. When it begins to foam this shows that it has been in the mouth long enough to have a beneficial action on the teeth. Now rinse out the mouth with clear water.

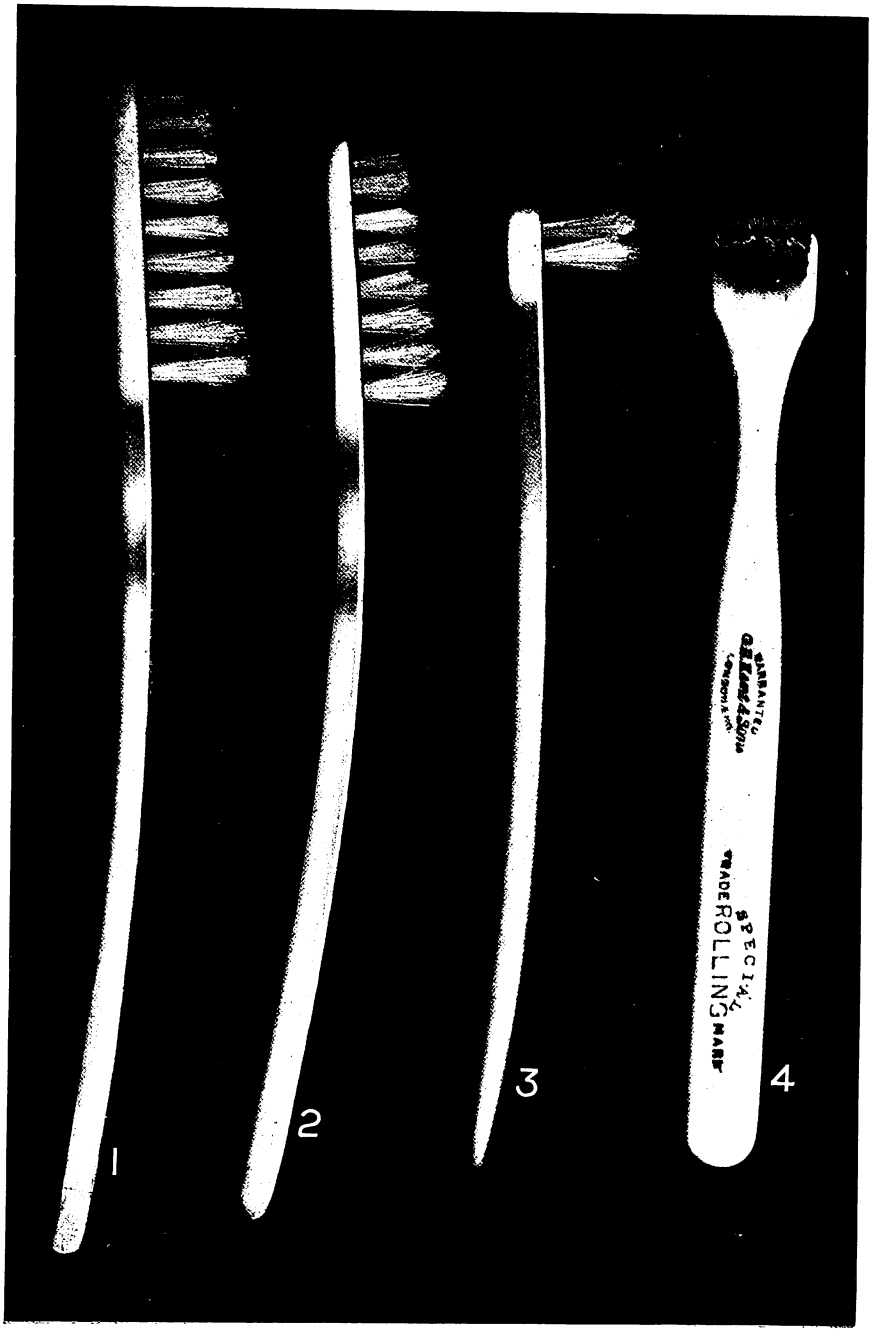
If the lime water is a little strong at first then dilute it about half and half. It should be used full strength, however, just as soon as the gums have become hard and healthy under the rapid, light brushing.

With the use of the lime water the toilet of the mouth is complete. The actual time required for the care of the teeth amounts to fourteen minutes daily. Faithfulness in mouth cleanliness will not only prevent dental diseases but will prove to be a valuable insurance for health. You are the only person who can save your teeth. Will you do it?

Prophylaxis During Orthodontic Treatment.
Contribution by Dr. R. Ottolengui, New York.

The general practitioner is very prone to complain that much damage may be done to the teeth of children during the treatment of their teeth for the correction of malocclusion. Dr. Clarence Grieves in his classic thesis on this subject (Items of Interest, May, 1909, page 326) conclusively proved that the danger is very real if appliances be carelessly constructed and unhygienically worn. The true orthodontist therefore utilizes the period of orthodontic treatment for the thorough inculcation of habits of mouth hygiene, and his child patients are carefully drilled in the use of the tooth brush.

Dr. Lawrence Baker, of Boston, has devised a carrier for port polisher brushes (see No. 14 of tooth brush illustrations) which has the advantage of carrying brushes which are small, and so cheap that they may be renewed daily. For general tooth cleansing the writer likes a brush of the general shape of the Prophylactic, of small size and medium stiff bristles. In addition to this he recommends the Rolling Special (see No. 3), and the children are carefully instructed in the cleansing of the teeth which are banded, and the appliances as a whole.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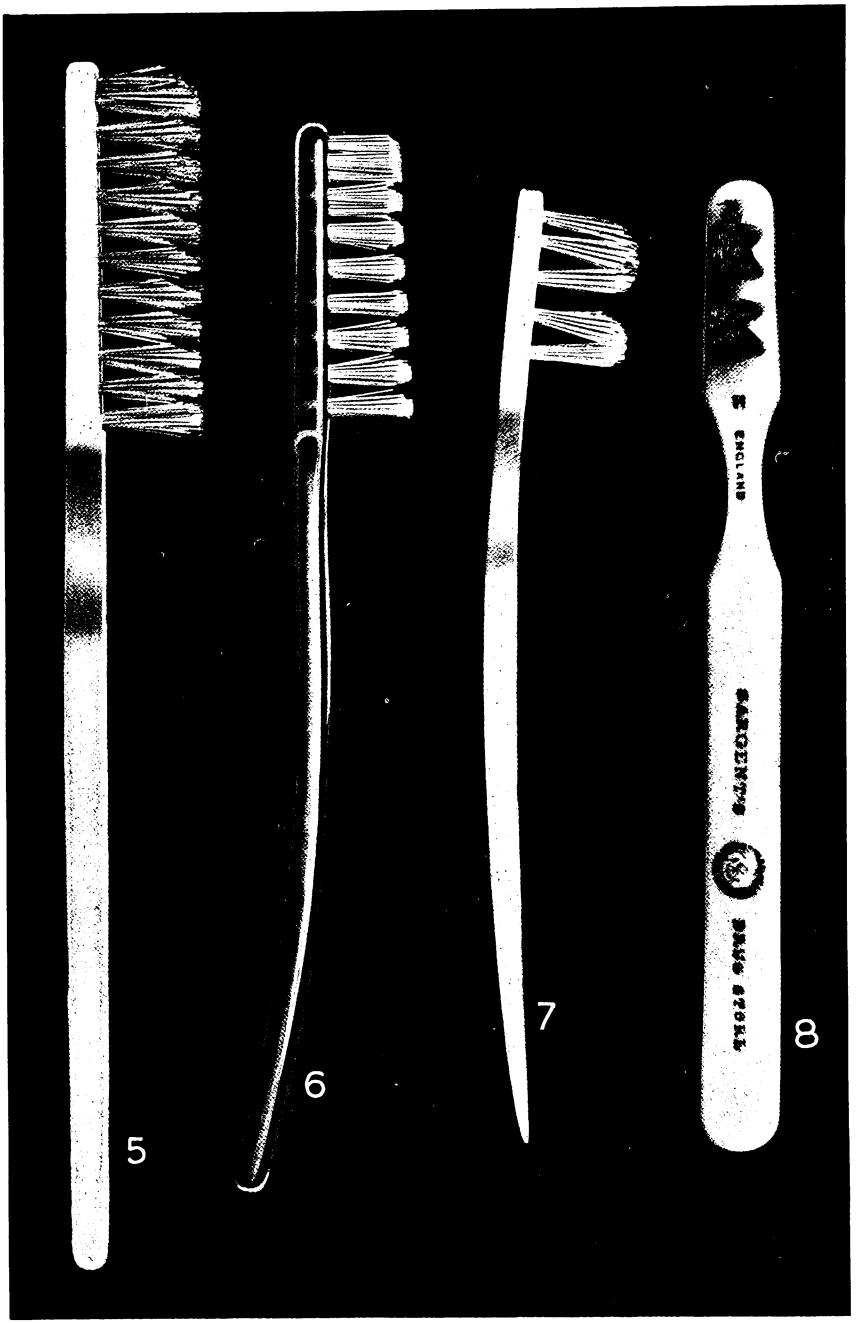
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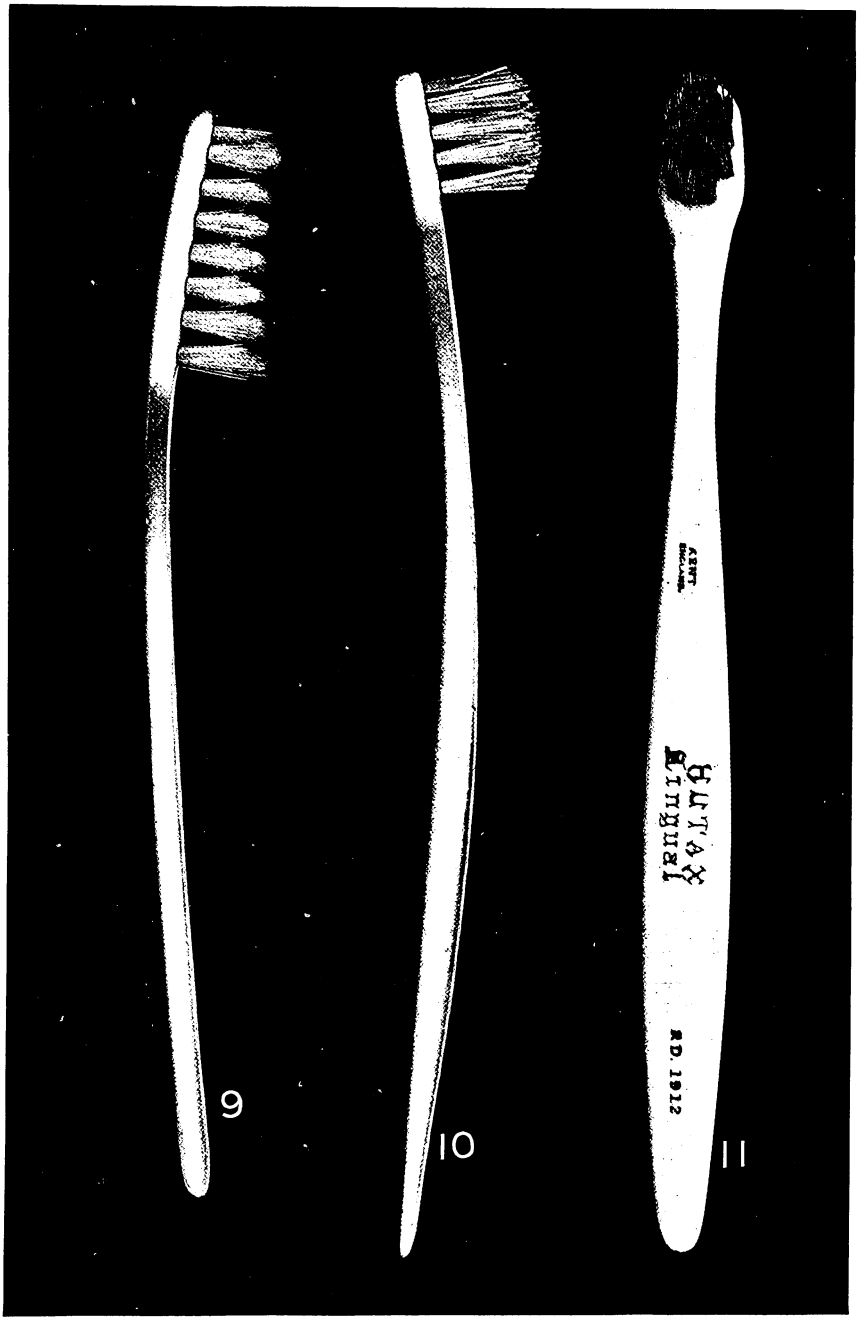
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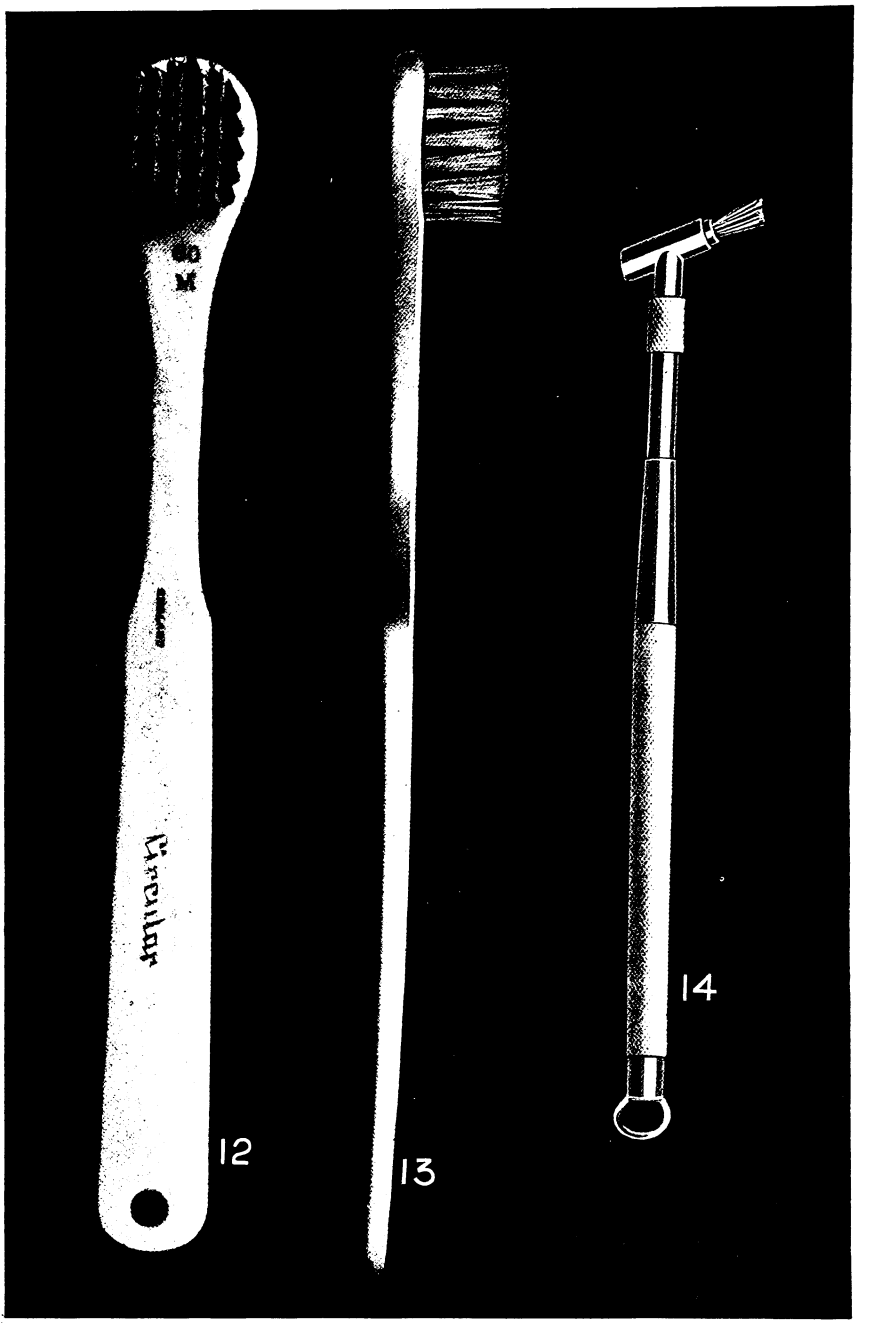
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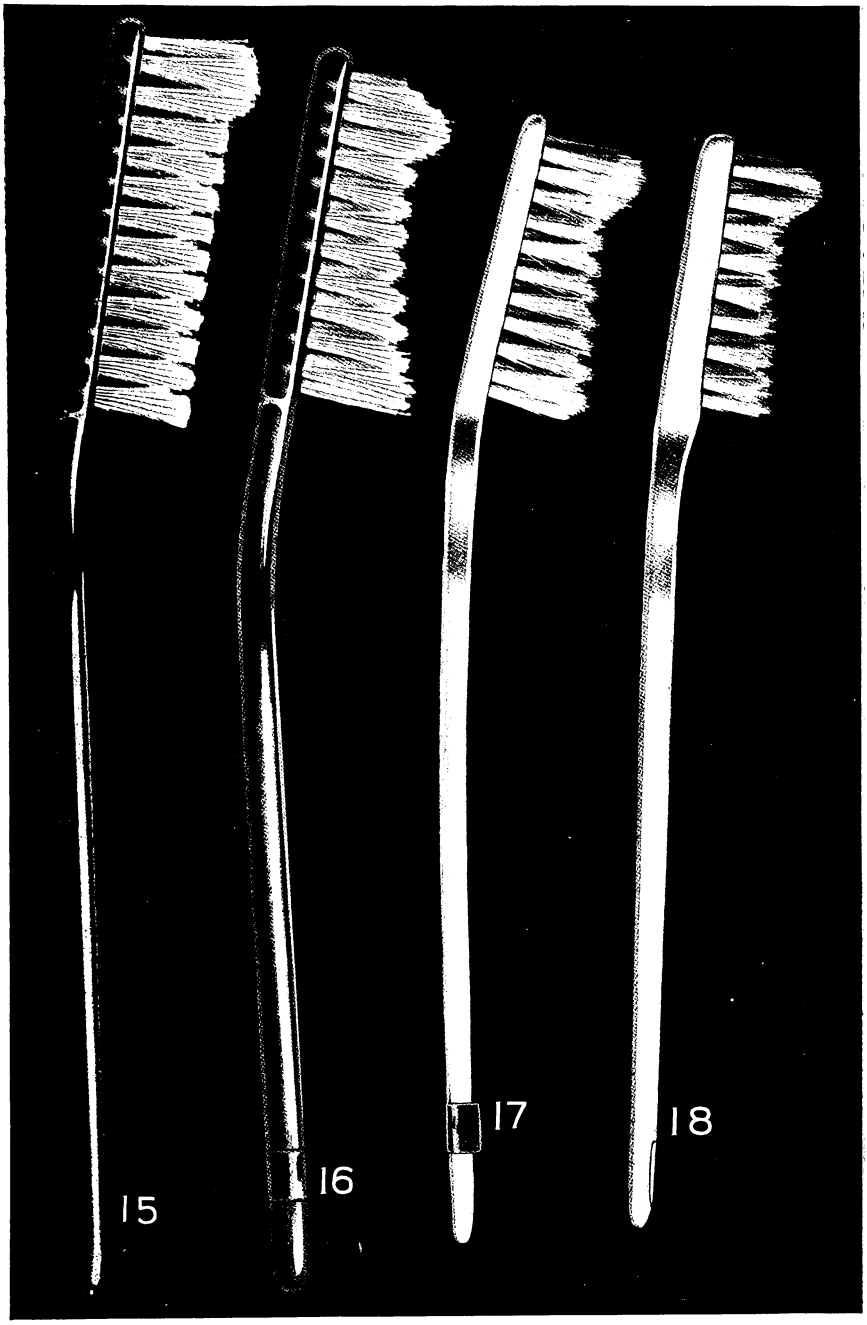
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18

Description of Tooth Brush Illustrations.

The illustrations are from photographs taken to show exact size, so that the reader, by comparison, may comprehend what size and style of brushes the various writers recommend.

Nos. 1 and 2. Large and small sizes of the Rolling tooth brush. These have bone handles. They are recommended by Drs. M'Call, James, Johnson, Hamm, and Stillman, the latter advising only the smallest size.

Nos. 3 and 4. Two views of the Rolling special, with bone handle. Advised by Drs. Hamm and Stillman. Dr. Ottolengui particularly recommends this little brush for children wearing orthodontic appliances especially the new Angle appliance.

No. 5. Dr. Patterson's brush. Bone handle.

No. 6. Dr. Hamm's Perfect brush. This has a fairly rigid celluloid handle and is manufactured by the company which uses the trade mark "Zel."

Nos. 7 and 8. Two views of Dr. Skinner's Lingual brush. Bone handle.

Nos. 9, 10 and 11. The Hutax brushes. These are the product of the Canadian Oral Prophylactic Association. They have bone handles, and are recommended by Drs. Johnson and Donagh.

Nos. 12 and 13. Two views of the Circular brush. Bone handle. Recommended by Drs. Spalding, M'Call and Johnson.

No. 14. This shows a metal carrier for port polisher brushes, devised by Dr. Lawrence Baker for children wearing orthodontic appliances.

No. 15. The Laroma, designed by Dr. A. C. Fones, and made for him by the "Zel" brush concern. Has a fairly rigid celluloid handle.

Nos. 16 and 17. The Prophylactic tooth brush. Both celluloid and bone handles are shown. Dr. Rhein, the designer of this brush, advises against the celluloid handles which are so thin that they are too resilient in his opinion. Dr. Stillman recommends only the smallest size, No. 17.

No. 18. The Rubberset brush, of the size recommended by Dr. Stillman. The handle is of some composition not so rigid as bone, but more so than most of the transparent celluloid handles. The brushes recommended by Dr. Sarrazan are numbered to agree with references in his text.

What Shall We Do with the Tooth Brush?

By Ernest C. Dye, A.B., D.D.S., Greenville, S. C.

Bacteriologists have proven that the tooth brush as it is now used "Is in a disgusting state of uncleanliness," "and is capable of spreading all sorts of disease." Does it not seem rather queer that we preach "mouth hygiene" from the press, the rostrum, and in our daily practice, and yet we allow that instrument (the tooth brush), with which the patient carries out our instructions, to practically go unnoticed? Antiseptic tooth pastes and powders reduce some of the organisms found on the brush, but they are not sufficient. Shall we discard the tooth brush? If we do, will not a worse condition follow?

Dr. D. W. Carmolt Jones and Mr. Herbert Smale, of London, in 1910, read a joint paper before the British Medical Association on the "Bacteriology of Tooth Brushes." It appeared to them that even in an infected cavity such as the mouth it was preferable that an instrument which is so used that it may scarify the gums should not convey any additional organisms into the wound. The tooth brush, therefore, may be the origin of pyorrhea alveolaris, which may lead to such grave consequences as anæmia, gastritis and arthritis. They advocate the use of a new tooth brush each day, or that all tooth brushes should be boiled for five minutes before and after use. The writer, afttr having read this article, and deciding that these plans were impracticable, invented the "Tooth Brush Sterilizer" (a description of which can be found in May, 1913, Items of Interest). Dr. Wm. Litterer, bacteriologist of Vanderbilt University and State of Tennessee, made experiments with this sterilizer with the following results:

Test of Tooth Brush Sterilizer.

"Experiments were made with full strength of formalin (Formaldehyde gas 40 per cent. in water). I used the following bacteria to test the germicidal power:

(1) Streptococcus pyogenes
(2) Staphylococcus pyogenes aureus
(3) Bacillus typhosus
(4) Pneumococcus

"The following method was employed, viz: The tooth brush was rendered sterile by superheated steam (autoclave). The sterile brush was dipped into a pure culture of (1) streptococcus pyogenes, and was then returned to the receptacle to be acted upon by the formaldehyde gas. All of the above germs were treated in like manner, and in every

instance double controls used. Both positive and negative controls. The result was that complete sterilization was effective in less than an hour's time. By drying the brush with the bacteria adhering to it the effectiveness of the sterilization was greatly impaired. The above results were obtained by using only the full strength formalin. No dilutions were

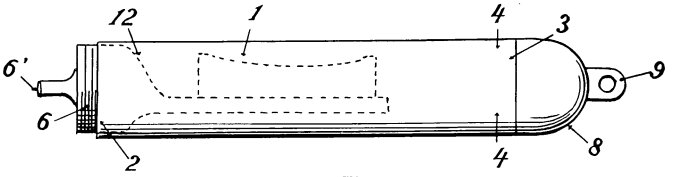


Fig. 1.

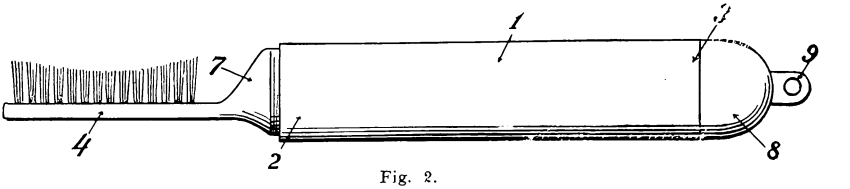


Fig. 2.

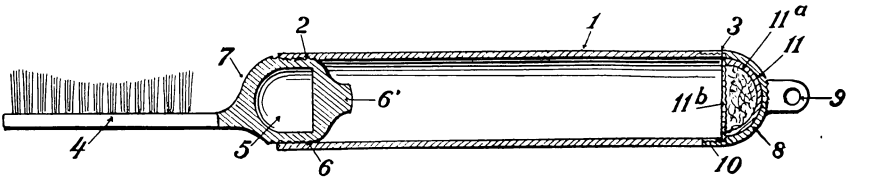


Fig. 3.

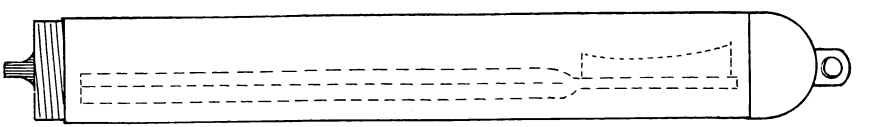


Fig. 4.

used. The question as to whether it would be too irritating to the gums can be answered in the negative if the brush is rinsed in water before using. The method appears to be a very effective and unique way of sterilizing a tooth brush, and in my opinion should be seriously considered by the dental profession."

The writer originally designed a tooth brush and sterilizer combined, as shown in Figs. 1, 2 and 3. Fig. 4 shows a sterilizer to be used for any brush.

The writer is indebted to Dr. Ottolengui for making the sterilizer practical. Improvements have been made on the original idea. It con-

sists of a long cylinder of glass or celluloid, like a test tube, in which an ordinary tooth brush can be kept, closed by a hemispherical cap, which contains a cotton roll saturated with full strength of formalin, the vapor from which renders the inside of the cylinder as well as the brush bristles sterile. The sterilizer also allows for the drying of the bristles. Dr. Jones and Dr. Smale, of London, experimented with this new idea and report that it efficiently sterilizes. Recently further experiments have been carried out along this line in London. The Star Company, of Great Britain, has the following article, which was extensively copied in this country, "To Keep Your Tooth Brush from Making You Ill":

"Recent experiments show that the great majority of tooth brushes are in a disgusting state of uncleanliness and so laden with germs that they are capable of spreading all sorts of disease. A brief ablution under the tap or in a tumbler after using is all the cleansing the average tooth brush ever receives, and this is totally inadequate to render it reasonably clean. In these experiments each of twelve sterile brushes was used once, rinsed ten times in a tumbler of water, and after standing twelve hours all the bristles were removed with sterile forceps and examined for germs. In eight out of the twelve cases more than a million organisms were found, a number comparable with that found in sewage. The brushes examined had been used by persons suffering from diseases of the teeth and gums. But four brushes used by persons with apparently healthy mouths revealed almost as large a number of bacteria. Antiseptic powders and pastes are helpful in keeping brushes clean, but even they are not sufficient. Experiments with seven such preparations showed that there was an appreciable reduction in the number of organisms; with two others there was practically no change; while with three others there was no appreciable improvement.

"What makes the tooth brush particularly dangerous is that each bristle point acts as an inoculating needle in carrying the microbes into the delicate membranes of the gums. As the tooth brush should be used at least twice a day, the gums get no chance to throw off one infection before another is forced upon them. Dr. Ernest C. Dye, of Greenville, S. C., has invented a tooth brush with a hollow handle to meet these difficulties. As soon as the brush has been used the bristle end is unscrewed and stuck into the hollow handle. In the inside of the handle a few drops of formaldehyde or some other powerful disinfectant are kept. The fumes of the disinfectant sterilize the brush before the next use. The same results may be obtained by keeping the ordinary tooth brush in a wide-necked bottle or fruit jar or any receptacle which can hold the brush and a few drops of sterilizer. It must be air tight."

The inventor has used a brush sterilized as described for practically

three years without any injury to the teeth or soft tissues. There is no unpleasant sensation from the use of the brush after being enveloped in the formaldehyde gas. One should either hold the brush under the tap or rinse in a glass of water before using.

The sterilizer is inexpensive and easily manipulated. All tooth brushes should be sterilized, for a healthy mouth, as has been shown, contains about as many organisms as an unhealthy one. It is especially helpful to the specialist in his efforts against the ravages of Riggs' disease.

Second District Dental Society, January Meeting.

A regular meeting of the Second District Dental Society of the State of New York was held on Monday evening, January 11, 1915, at the Kings County Medical Library Building, No. 1313 Bedford Avenue, Brooklyn, N. Y.

The President, Dr. A. H. Stevenson, occupied the chair, and called the meeting to order.

The Secretary read the minutes of the last meeting, which were approved.

President Stevenson. This meeting to-night is a rather remarkable and unusual "gathering of the clans." In this room now there are assembled representatives from at least fourteen institutions in this borough, including orphan asylums, settlement houses and reform schools. All have come at the invitation of the Second District Dental Society for a definite single purpose—to learn how best can be accomplished the correction of that most serious handicap to child development—the unwholesome and diseased mouth. The great proportion of children in our institutions struggling to acquire their mental, moral and physical development under this handicap has aroused the administrators of these asylums to action. Something must be done, and done promptly, they agree; and just how to proceed with corrective measures has been the topic of discussion at innumerable trustees' and directors' meetings of late. This society has received many requests for advice during the past year, and as the official organization of the dental profession in this community we have been glad indeed to render any assistance within our power.

To be of further usefulness, we have convened this meeting, with the firm belief that you were entitled to even better advice than we could give; in fact, that the best was none too good. We have invited those to speak to you whose words are expert, and whose ideas are practical, being the result of profitable experience.

Before introducing them, I wish first to impress upon your minds that the topic of the evening is prophylaxis and prevention. From the health line of the normal, there is the deviating side or the minus side of disease; and then on the other hand, the plus side of prevention. In trying to make our equation, we will take under advisement this latter phase of prevention—all other considerations being subservient.

The first speaker is a man whose love for children has inspired him to devote energies and considerable means in this direction for a period covering many years. He enthuses all who hear him, and I take great pleasure in introducing to you Dr. A. C. Fones, of Bridgeport.

Dr. Fones then read the paper of the evening, which was entitled: "The Dental Hygienist in Public Institutions."

The paper was illustrated by lantern slides. The paper was published in the February issue.

Dr. Fones. The great problem lies in those 1,575 cavities in the permanent teeth, found in children in the first grade, and therefore existing before the child starts school life. I am convinced the parents of those children will have the cavities filled themselves, because the moment they find out the condition, they ask. "What shall we do?" We hope finally to educate the parents to take care of the children's teeth from two and a half years to five years, up to when the children come to school.

Dr. Ash. Do you mean there were 3,826 children, and in that number there were 1,575 cavities in the permanent teeth?

Dr. Fones. Yes. In the second grade we found 742 cavities in 840 children. The whole problem rests here—the extraction of so many of the temporary teeth that are reeking with filth, and very many with abscesses, and they should be taken out; but we can cope with that condition, because those permanent teeth are coming through, and as they do, with proper prophylactic treatment and education in regard to cleanliness, I believe we can prevent decay. In fact, I know it is feasible to prevent all but very few cavities from forming.

Dr. Ottolengui. Do you believe if each school would have one dentist he could take care of those cavities in the temporary teeth?

Dr. Fones. No, it is impossible. How can we handle such a proposition? We cannot handle it from the standpoint of actual operative work, but we can handle it from the prophylactic standpoint. We must learn to wait, and that is the only way any educational problem has ever reached success. The man who thinks everything can be done in three or four months is mistaken. The public soaks up those things slowly. You must be willing to wait and slowly give that knowledge and keep on giving it until at the end of five years you will not see any figures such as these. I am as confident of it as I am that I am alive.

President Stevenson. We have listened to a gentleman who has a beautiful ideal, and who has not hesitated to try to bring it to its fulfillment. There are undoubtedly some in the profession who do not just agree with the methods and means that he has used; but after all, it is the result that counts, for "by the fruits shall ye know them." I hope this society will again have Dr. Fones here, not many years hence, when he shall have compiled further data that will be so overwhelmingly convincing that there will be no doubting Thomases whatever.

Dr. Fones has not spoken directly of asylums and such institutions, but there are many here who are particularly interested in such organizations. We are going to deviate from the usual way we conduct our meetings, and instead of throwing the paper open for discussion, we are going to have another paper by a gentleman who comes from Boston, and who has been doing perfectly wonderful work there in an orphanage known as St. Vincent's Orphan Asylum. By means of strict application to hygiene, and rectifying dental lesions, he has almost eliminated dental decay.

I will introduce to you Dr. S. E. Keyes, of Boston.

Dr. Keyes. Before I begin, let me say that I am an avowed opponent of the dental nurse problem.

Dr. Keyes read his paper.

Discussion of Dr. Fones's Paper.

President Stevenson. I received a telephone message from Dr. Baker, of the Department of Health, telling me she could not attend, as she had left her office this afternoon feeling very ill; but there is in this room the chief medical inspector of the department of Child Hygiene. He is vitally interested in this work and I will call on Dr. R. H. Willis.

Dr. Willis. The subject is one in which we have been interested for many years. We have arrived at the conclusion that the problem is such a tremendous one,

that it is almost impossible to do anything until someone can convince the Board of Estimate of the immensity and importance of it.

There is so little than can be done that it is practically a hopeless problem until more money can be obtained. The results have been very gratifying as far as we have gone; but it is merely a drop in the bucket.

Dr. C. P. Hyatt. I think Dr. Fones has very clearly shown you what will be the effect upon the human being if dental neglect is started in early life—the imperfect development of the skull, and the effects on the brain. It does not seem to be there can be any question as to the importance of doing the work; but it is so gigantic that we hesitate! And we hesitate! And still we hesitate.

We remember very well that when the United States government sent some officers down to the Panama Canal, many of the men feared it would be run on a military basis. The Colonel said: "The only military part of it will be that I am the boss, and you are my lieutenants, and there is the gap. We must get at the enemy."

Now, in regard to this, we should not say one plan is better than another plan, and wait and do nothing.

I do not find fault with Dr. Keyes when he does not believe in the dental hygienist, nor do I find fault with Dr. Fones when he does believe in the hygienist; but let them get at the work and we will support both of them.

If you want an institution to have hygienists, for the Lord's sake go at it and let them have it. If you want an institution with men to do the work, then for God's sake go ahead and get at it. Do something.

You talk about the money. I spoke with a gentleman only yesterday about the terrific condition of the subway. He said: "Dr. Hyatt, there was just one man who had gumption enough to say what was needed, and he emphasized the fact that he would only be in favor of a subway in New York with eight tracks. They only wanted two—an uptown and a downtown. He compromised on six, and the short-sighted politicians cut him down to four. It is costing hundreds of millions of dollars, because they could not see the broad ideas of the man who wanted these eight tracks instead of two at the beginning.

If we could only show the heads of the city that we are going to save them millions of dollars—I am sure we will save them a hundred million dollars—I am sure they would help us. How much does it cost this city to educate the pupils who are not promoted at their proper time?

Dr. Ottolengui. Forty-six dollars a year for each pupil. About 85,000 are not promoted annually.

Dr. Hyatt. That is only New York. Then there are all the other cities. Count all the others and see what it amounts to. I believe that of all the criminals we have to pay big police forces for—the insane asylums, the hospitals, and all the big institutions, there is a large percentage that would have been saved to the human race had they had a proper development of child life. How many criminals are there? How much thievery? How large a police force? How many convicts?

I think I was modest when I said a hundred million dollars; I should have said a hundred thousand million dollars. Add to that the loss of work and the benefit we would have had from intelligent men and women, and I think you will quadruple my figures instead of making them smaller. We become fascinated with the possibility of what will come to the human face when we wake up and spend a few million dollars to take care of the children in our cities.

Dr. Shea. One of the directors of the St. John's Boys' Home in Brooklyn was to be here this evening. I invited him, and also a director of St. Joseph's Female Asylum. In those institutions we have no dental hygienist, but I wish they had. They have, however, done the best they could. They have from 1,100 to 1,300 boys at St. John's School, and about 800 girls in St. Joseph's. Those children come in as infants, from two or three years old upwards.

I became interested in that work, and obtained my knowledge from the committee in this society. I followed up their suggestions, and I realized after starting the work in those institutions how absolutely impossible it is for any man working ten hours a day to do anything of any amount.

I mentioned this fact several years ago. Before I went to these institutions they had had dental treatment for the past twelve or fourteen years. The man who was there had done a great deal of work along the line of filling and treating teeth, and had devoted a great deal of time to abscessed conditions and putrescent root canals. He did not get any great amount of figures to show; but when he was finished, he had cleared up a lot of work, and had done it properly. I do not think the directors of the institution realize how much work he did. He worked on the theory that he would do the work for that institution as he would do in his own office, and I believe any man should do that, or the institution is no place for his work. It takes time to do it, and it will take a competent, conscientious man a long time to clear up the teeth of 800 children.

They gave me an assistant and a nurse and I trained the nurse along

the lines Dr. Fones has described. This was a graduate nurse, and she had someone to help her. My assistant goes into those institutions and takes care of the teeth of the very youngest children. When a child is brought in, it is sent into the quarantine house and isolated for a time to see that nothing developes. A medical examination is made, and it is then turned over to myself or my assistant, usually myself, to make a thorough examination of the mouth. We look for diseased conditions. Nearly every case has to have dental treatment, even those children two years old. It is sent over to the dental infirmary. My assistant takes care of that child or children. Usually three or four come in at a time. I do the educational end of it by going through the class rooms lecturing to the different classes. We have a regular course, and they pass a regular examination, and they know the physiology and the circulation. I want them to understand why. The children in the higher grades will surprise many of you, if you go in there and ask them questions.

It is a Roman Catholic organization. They do not ask me to do the work for nothing, and I consider that I am well paid, and so is my assistant. All we have to do is to ask for what we want. They manage to get the money, and they give us everything within reason. I am hoping we will get three or four good men there, so we can give more time to the work.

We are starting with the younger children, and making sure of every child that comes in—the lower grades are all cared for, and we do the best we can with the other grades. As Charles Mayo says, the science of medicine to-day is in prevention. The ITEMS OF INTEREST, for August I would like to have you read on page 611, an article by Joseph Kussy.

President Stevenson. Mr. Grinley, who is in charge of one of the institutions Dr. Shea mentioned, is with us, and we would be glad to hear from him.

Mr. Grinley. I do not know that I can supplement anything that Dr. Shea has said, beyond the fact that I was instrumental in having him come to us. I cannot speak from the professional side—only the business side. I found the results the last year or two very good—in fact, I was disappointed that we could not have Dr. Shea's services entirely.

I was interested in his method of arousing the children's interest by means of pictures. He threw a picture of Christy Matthewson on the screen first, with a nice smile on his face. He asked the boys if they wanted to be as good a ball player, and, of course, they all said yes. The next day they used up all the soap in the place. They cleaned their teeth a dozen or two dozen times a day.

In the girls' school, he showed a picture of Mme. Melba, and she had a nice smile. Of course, all the girls wanted to be like her. The children all became interested, and his training and the quiz convinced me that the boys understand the rudiments anyhow of keeping the mouth clean, and I agree entirely with what Dr. Shea has done. I think it would be a good thing if preventive methods could be inaugurated in other institutions.

It is impossible for him to keep the teeth of every child clean, but the members of the board all agree that an ounce of prevention is worth a pound of cure. I am glad to say a work of commendation in regard to these methods.

Dr. Shea. I might mention that whenever we do extraction in the homes, if there is one parent alive, we always get the consent unless it is an emergency. In most cases we get the parents to sign a consent to the extraction.

Dr. Ottolengui. I notice in the lecture by Dr. Fones that the hygienists are carrying their dental office around with them. It seems to me the time must come when the State will at least supply that. There is an equipment in a school in this city which was obtained through the influence of the Kings County Society. Dr. Williams and Dr. Shapiro can tell us something about it, and I think it would be an interesting contribution to this discussion.

Dr. Shapiro. For several months we have almost let it go out of sight. During the school season of 1913-1914, the work went on by voluntary service. The members of the Kings County Dental Society, to the extent of ten men, worked at the rate of two every day, and managed to fill out the week, each man devoting one and a half hours of his time in the morning, making three hours a day for five days a week. The equipment was furnished by having collected some money in the neighborhood from certain charitably inclined people.

It is very hard to conduct a clinic by voluntary work on the part of men. Men promise sometimes to come and do work, and fail to appear, and the principal became somewhat tired of it. Some men are faithful and persevering in it, however.

President Stevenson. This society conducted a clinic some years ago under the auspices of the Bureau of Charities of this city, and we found in dental work of that kind, where a man continues an operation commenced by someone else, it was not always a success.

Dr. Shapiro. For the first six or seven months we went at the work in the old manner of treating carious teeth, and continued to do that until Dr. Hyatt, I believe, made the suggestion that instead of continuing to do the work in that way, we restrict our work to the prophylactic end of it, and confine our work chiefly to the children in the lower grades, which we did.

Dr. Ottolengui. I called for that record because this information will be read all over the country. There has been a clinic conducted here in this city in a room in a school. It has been changed, I understand, to a prophylactic clinic.

You all laughed when Dr. Hyatt said it was possible by prophylaxis to save in the United States a hundred million dollars. I was surprised personally that Dr. Hyatt put the figures so low (laughter). He did not say in what period of time that would be saved, but if we gave him time, I think probably he would have told us.

I will show you how quickly this runs into real millions. I had the honor of being present at the dedication exercises of the Forsyth Dental Infirmary, in Boston, and one of the speakers, Mr. McSweney, who is the head of the hospital for consumptives, made the statement that there are 128,000 defective children in the public schools in Boston, and if some effective means of preventing tuberculosis were not found, that before these children reached the age of twenty-five, 12,000 of them will have died of tuberculosis, and the State will have spent $3,000,000 on the useless education of those children who die before they return anything to the State, either through production or property, or through the production of children.

Since hearing that statement, it has seemed to me that if the State could lose $3,000,000 by the death of the children from one disease only, if we could get the complete statistics we would find we are uselessly spending money on the education of children who are doomed to death before they can repay the State to such an extent that Dr. Hyatt's estimate is ridiculously low.

Dr. Hyatt. I just met a gentleman who said if he had known I was going to speak along the lines I did, he would have supplied the information as to what it cost the city alone—$3,000,000 a year for pupils who do not progress in the ordinary way.

Dr. Evans, of Chicago, told us that ninety-five per cent. of the children who were not promoted had physical defects, and ninety-nine per cent. of those had defects of the mouth.

Dr. Van Loan. We have asked some of these gentlemen about the importance of cleaning teeth. Why swat the fly when it is a great deal better to remove the breed-

ing places. It has been my experience, where children can be induced to eat hard or crusty bread, that we do not have the cavities in the teeth, and the dirty teeth that we get where the children are brought up to cut out the inside of the bread and eat it. I have seen that proven in many instances. I was called in by a doctor to see why his seventeen months old baby did not cut its teeth. I said: "How much bread does the child eat." He said: "None." In one jaw it only had one central incisor and one lateral, and in the other jaw the gums were swollen and had to be lanced to help the teeth through.

Shortly after that another patient came to the office with a baby. She said: "Doctor, the child has fever, and the physician has suggested that the child's teeth bother her."

The child was seventeen months old, and was about in the same condition as the other child I spoke of. I lanced the gums over the teeth, and the relief was immediate. The mother said: "Why does not the child cut its teeth in the proper manner?" I said: "How much hard bread does the child get? Was it brought up on patent food?" Her answer was "Yes." Most of the children you heard spoken of to-night are the children of the foreign element. The mothers and fathers were brought up on hard crusty bread. When they come to this country the child goes early to the candy shop, and does not get food that requires the force and mastication such as Dr. Fones so ably exhibited in his pictures of the muscles of the jaw.

We must keep the teeth clean—we all admit that; but I do not believe that is all. I believe you must use those teeth, and the child must be taught to use them as soon as they erupt almost. In my own family, I have three children, two of them quite well grown. The father and mother have very poor teeth. Those children have been brought up under the conditions I have laid down here, of beginning when the child is five or six months old, to munch a crust of hard bread. One child at nine years has all the second teeth with not a particle of decay, and without extensive prophylaxis. The second child is six years of age, and beginning to get the second teeth. She never had her teeth cleaned by a dentist, and never had a cavity in any of the teeth.

Dr. Fones.

I do not wish to be misunderstood in the presentation of this paper that I am not in favor of a repair clinic. We must have a repair clinic, but the prophylactic work should be much larger in scope, to prevent the decay.

The last gentleman who has spoken is absolutely correct in his statement; but before we can get to that point, we must start at the first round of the ladder. We must interest the children in the prevention of decay, and then educate them to use those teeth as they should and chew hard

food, and instruct them in the proper brushing of the gums and the development of the teeth.

You must start at the lowest rung of the ladder and interest the children, and have them carry the message home; and then you can do more educational work. Compulsory fillings in the schools is wrong. When you say "You must have your tooth filled," the parent says "Who says so? The child says "I don't want it done, it will hurt." You must say it is a menace to the health of the other children in the room.

The State should look to it, but it will be some time before you can make it compulsory that the child should be led to a room where it shall be done. However, you can interest a child, where you cannot compel him. We must teach people how to feed their bodies. It will all come in time, but very slowly. There is an inertia in that respect, and you can only deflect communities a very little at a time. The larger the mass of people, the harder it is to influence them. With children in the lower grades, six. seven or eight years old, what is taught them in school is law. They will follow it out at home. It must be based on absolute fact to have scientific interest. I have children ten, twelve or fourteen years old in my practice, who have never had a cavity. I have had adults under observation who have not had a cavity for years. It is not a theory with me; it is an actual experience. Any man in the room can do it. You put patients through a course of prophylaxis, and if they will be faithful, you can absolutely eradicate decay.

Much of the disease among children is absolutely unnecessary—I mean to the extent that it is found in the public schools. See what Dr. Keyes has done in four years. In 1913, I investigated one hundred and sixty cases in my practice, and only eight out of those had been sick in that year. There is something in this, besides the question of the teeth. The teeth are only a small part. It is the entire body. The mouth is the greatest incubator, and the hands are the greatest carriers. When you teach children to eat nothing until their hands are clean, and you help them to keep their mouth and teeth clean, you will practically wipe out all infectious diseases, and seven-eighths of the misery that is now going on.

President Stevenson tendered the thanks of the society to the essayist, and to the gentlemen who participated in the discussion.

Adjournment.

Dental Prophylaxis.

We present in this issue a symposium on dental prophylaxis, with special relation to the home work to be done by the patient himself. The word "prophylaxis" presupposes a state of health, or at least an absence of any extensive area of disease. True prophylaxis then entails the prevention of the occurrence of disease, though the term may be made to include the prevention of the spread of disease from a small to a larger area. In either case the cure of existing disease must be within the province of the dental attendant and should not be relegated to the patient. To the patient, however, may, indeed must be entrusted the constant cleansings which will aid the dentist in his curative work by preventing reinfection of healing surfaces, and which will prevent the infection of healthy tissues, in which last respect the patient co-operates in a genuine prophylactic campaign.

It is manifest, therefore, that no instructions should be given to a patient which might render it possible for him to induce infection of any of the oral tissues. This brings us to a discussion of the most vital point of difference between the contributors to the symposium.

Rotary Brushing.

Dr. M. L. Rhein tells us that the rotary motion of the tooth brush is to be avoided; that clinically and theoretically it is dangerous; that the points of the bristles should not touch the gum tissues for fear

of puncturing; that with skill this method may be used in mouths of individuals enjoying immunity, but that where immunity is lacking the danger of infection is sufficient to render the method dangerous. He adds that he thinks the method has been adopted because it has proven successful in the mouths of children, and then claims that children have a well-established zone of immunity.

There seems, however, to be two views on this subject. Dr. Grace Rogers Spalding makes one of the wisest and most important contributions to the symposium where she says: " . . . . our greatest ambition and desire is to produce and maintain clean, healthy and comfortable mouths, containing an efficient masticatory apparatus. We value much more the sustaining and supporting structures of the teeth than we do the crowns of the teeth." It seems highly improbable that a practitioner could thus express the importance of maintaining the health of the environment of the teeth and yet teach a method of cleansing which clinically had resulted in producing infections, even occasionally. Yet later Dr. Spalding says: "I prefer the circular motion of brushing."

"Dr. John Oppie M'Call says: "The brush is moved on the tooth surfaces as though describing circles with the bristles." He does not definitely state that the bristles must brush the gums as well as the teeth, but it would seem difficult to avoid touching the gums with any sort of circular movement.

Dr. Andrew J. McDonagh tells us that, "On some of your teeth, just at the gingival margin, it is necessary for you to use a circular motion to reach every part."

Dr. F. H. Skinner agrees with Dr. Rhein. He says: "Brushes are to be used always with a rolling motion, placed well up on the gums and brought toward the incisal ends of the teeth, and the bristles should never be allowed to stab the gums." . . . . "He should be careful never to prick the gums with the bristles, as they always carry infection."

Dr. Paul Stillman says that the brush "should always be used with . . . . the free ends of the bristles always at right angles to the surface to be cleansed, using reasonable pressure and a very short circular stroke. Scrub the crown and gums of each tooth, one tooth at a time."

It is perhaps Dr. Alfred C. Fones who has been the most ardent advocate of the circular or rotary motion in brushing the teeth. His

article in this issue is really a reproduction of an illustrated pamphlet which Dr. Fones gives to his patients. There is no doubt that Dr. Fones means the rotary motion to reach the gums as well as the teeth. He not only tells us so in plain words, but he pictures the movement so that there can be no mistaking his intentions.

Dr. Fones, more than any man in dentistry, is the apostle who preaches the prophylactic advantages to be gained by the constant and proper brushing of the teeth. To prove his contention he has sacrificed much time and money in inaugurating a school for the training of dental hygienists. These women have been taught to teach the rotary method of brushing. During the past winter ten of Fones's hygienists, under his supervision, have taught some four thousand children to brush the teeth in this manner. This experiment in school prophylaxis has been so successful that the municipal authorities of Bridgeport have granted him the appropriations needed to treble the operations for next year.

It is perhaps this fact which Dr. Rhein has in mind when he tells us that it is success in the mouths of children who enjoy a high immunity which has given the rotary method any standing. To this argument two responses may be made and must be considered.

Theoretically children enjoy greater vital resistance to inroads of disease than do adults. On the other hand, child mortality is much higher than that of the adult, per capita of the population. The adult is the child who has had sufficient vital resistance to escape mortal diseases and has thus arrived at puberty. It follows then that when dealing with large numbers of children there should be some as easily infected as any adult; some as lacking in immunity. If then there is danger of infection from the rotary motion of the brush, such infections should have occurred in some of the mouths of the four thousand children who have been taught by the Fones hygienists to practice this method daily. If such infections have occurred, as may be argued, then either the medical inspectors in the schools or the hygienists themselves have been derelict in an important duty. Indeed, as this winter's work has been purely of an experimental character, it should have been most closely watched by the medical inspectors to make sure that no harm came to the children.

The other thought is this. It is true that at present Dr. Fones and

his aids are promulgating his doctrines more among children than among adults. But it is not true that Dr. Fones in his private practice has been specializing with children. On the contrary, his records show that the major part of his practice has been upon adults, and no inconsiderable proportion of it has dealt with mouths which came to him in an infected condition, and which have been made healthy and maintained in a healthy condition by this rotary method of cleansing.

Yet, on the other hand, Dr. Rhein has given too many years of study to the subject of mouth hygiene, and in latter years more especially to the question of infections emanating from within the oral cavity, for us to lightly dismiss any warning that he may give.

How, then, may we compose the radical differences between these two extreme views. On the one side we hear: "Avoid the rotary motion of the tooth brush lest you infect the soft tissues!" Conversely we are told: "Use the tooth brush upon the gums in rotary movements and bring the soft tissues to a state of health."

A Possible Solution of the Problem.

The writer disavows any special knowledge of prophylaxis; still less is he qualified to determine problems involving questions of immunity to infection. He is, however, cognizant of certain fundamental principles from which it seems to him logically possible to arrive at the truth in regard to this danger of infection from a tooth brush used in rotary fashion.

If ten dentists, aye, even ten periodontists, be seated in a room, and if sterile swabs be brushed along the gums, and then swept lightly across the surfaces of Petrie dishes filled with agar-agar, and these be then incubated, within a few days in all probability growths of fungi and bacterial forms of various kinds will be discovered in every dish. Among the bacteria will be found many which we associate with serious pus conditions. Why then do we not find actual pus foci in these mouths?

The explanation depends upon the question of pabulum and immunity. These bacteria, containing great potential virility, are nevertheless innocuous, simply because conditions and vital resistance prevents their propagation.

Lower the patient's vitality, even though the patient be a child, and

coincidentally abrade, scarify or otherwise break down the protecting epithelial layer of the mucosa and within twenty-four hours a focus of pus may be present. The writer has seen serious, really serious interproximal infections, from a fish bone forced into the gums; from a loosened orthodontic band which because of its looseness has been forced against the gum; from particles of food jammed between the teeth and there held by rough fillings or by cavities, etc., etc.

It is therefore perfectly possible, as Drs. Rhein and Skinner claim, that an infection may result from the use of a tooth brush in such manner that the bristles pierce the gum.

Why, then, do we not hear of these infections in the mouths of the patients of Drs. Spalding, M'Call, McDonagh, Stillman and Fones?

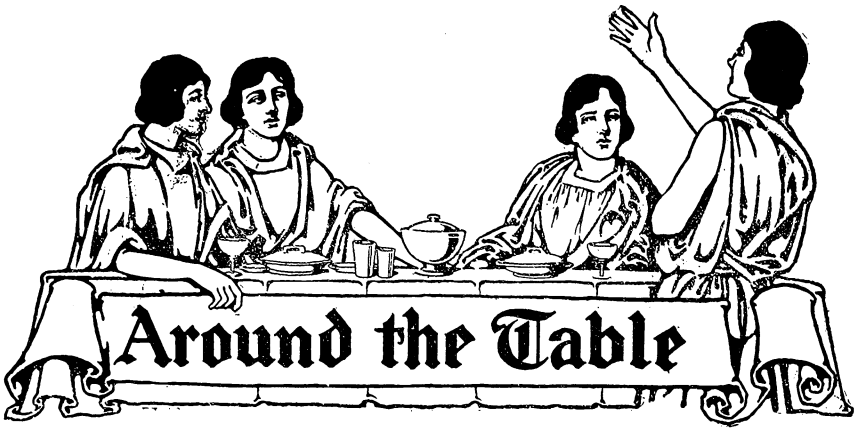
These men do not recommend that the teeth should be brushed with the rotary motion *just once!* If four thousand school children should use the rotary motion of the brush just one time, and then abandon the method, it is highly probable that a great many, hundreds probably, would exhibit inflamed or infected mouths within forty-eight hours. But the Fones hygienic school propaganda cannot be adjudged in this manner. The child cannot brush his teeth, wound his gums and leave the abraded tissue to be preyed upon by the mouth bacteria present. The brushing is followed by the use of lime water so prepared and so used that, we are told, that it will dissolve and remove bacterial placques from the teeth, while the brushing and consequent massaging of the gums produces an influx of blood, exciting a greater activity of the white blood corpuscles, and hence an increased phagocytic action. Thus the numbers of the invading parasites are decreased partly by friction of the brush and partly by solution and washing away with lime water. Coincidently the vital resistance of the host is increased through freeing the mucosa of infected mucous and slimed-up, dead epithelial cells, while an improved blood flow invigorates the parts and consequently immunizes the tissues to some extent.

The battle, moreover, is not limited to a single skirmish. The patient inaugurates the treatment before breakfast and repeats it after meals, so that the combat is continuous. Even if at first there should be some slight wounding of the tissues, the complete treatment, so Dr. Fones tells us, not only does not result in infections, but in the end produces

mouth tissues which practically cannot be injured by the most vigorous brushing, and which are in a high degree immune to infection from any of the mouth flora.

May it not be that a single use of the rotary method might cause infection, whereas the continued and constant use might induce immunity? These views are only advanced tentatively as possibly accounting for the antagonistic opinions held by men of admitted exxperience, and further discussion is invited.

In the symposium there are other contradictory bits of advice, which, however, need not be considered here. Some succeed with small brushes, while some prefer larger. Some recommend dentifrices, while others do not. There seems to be one factor common to all directions, which perhaps is more responsible for good results than either large or small brushes, with or without dentifrices. And that factor is a vigorous wrist movement, with a plentiful supply of what grandmother used to call "elbow grease."



IF THERE IS ANY ONE who thinks that there is not a good hotel in the Borough of Brooklyn, let him visit the Hotel Bossert. And if there is any one who thinks that they do not have good dental meetings in Brooklyn, he missed it by being absent from the April meeting of the Second District Dental Society, which started with a sit down, around the table dinner, and ended with an all around rattling good series of talks about filling root canals and what happens if you do not fill them. But that will all come out later. Just at present let me tell you about the talk down in the Grill, after the scientific crowd had departed. I almost called them the Scientificos.

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THEY DID NOT KNOW IT but I purposely invited only those who know (or think they know) how to make scientific bridgework. As they say about Postum, "there was a reason." There was one funny incident during the discussion. When the President introduced Dr. Schamberg to take part in the discussion he remarked; "There is a gentleman here from Manhattan. He does not know that I am going to call on him but I do so because I know he has something to say that will interest us all." Then Dr. Schamberg went at the subject hammer and tongs, and to clinch his argument showed a few lantern slides. Not so bad, considering he did not know he was to speak. Nothing like carrying your slides always in your vest pocket. Never know when you may need them these days.

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FACT IS, DR. SCHAMBERG knew he was to be called, only the President did not know that he knew. It was like this. I was talking to Dr. Schamberg over the telephone during the morning trying to get a report about a patient, when he burst forth with a perfect tirade against bridgework, and the deaths and disease that could be traced to rotten bridgework put on rotten teeth. I think that was the way he put it, and he was not making any joke either. Perhaps he used a little more polite language than that, but his meaning was not the least little bit more polite. Finally I remembered my patient patiently waiting, and broke in with

"Oh! Tell it to George." "What is that?" said Dr. Schamberg, "I did not get that!" "I say come over to-night to the Second District meeting," said I, "and I will ask the President to let you tell us all about it publicly. And bring some pictures to back up your story."

THAT WAS HOW it happened that Dr. Schamberg was ready with his argument and his pictures when called on. And believe me it was dramatic! Remembering how the bridgeworkers of the country roared when Dr. Hunter dropped a few remarks about "American Dentistry," and "Septic Dentistry," sort of linking the two together as it were, I could not but wonder to see that large audience applaud Dr. Schamberg when he announced that "the bridgework of to-day, with its dire results in maintaining oral sepsis is such a crime, that if the dental profession does not itself solve the problem of supplying artificial teeth without utilizing incurably infected roots as abutments some day the Government (Government with a big "G") will take the matter in hand!!!" Or words to that effect.

"FAR BETTER WOULD IT BE," said Dr. Schamberg, "to extract all dead or pulpless teeth and insert old-fashioned teeth on plates, than to continue the disgraceful methods of bridgework attached to septic teeth hundreds of which are not cured first, and still other hundreds of which are not curable at all, with the result that the hospitals are filled with patients suffering from all manner of body ills, traceable to the infected teeth under the bridgework, which constantly seep dangerous toxins into the system."

LATER HE ADMITTED that a few men are constructing "safe-to-wear" bridgework. But he did not mention the gentlemen's names.

THEREFORE I INVITED a few bridgeworkers down into the Grill that I might discover just how they had liked the grilling from Dr. Schamberg. Addressing Bridgeworker No. 1, who is a No. 1 bridgeworker, I asked "What do you think of the picture painted by Dr. Schamberg. Was it too highly colored?"

"NOT AT ALL," replied Bridgeworker No. 1. "As he says, it would be far better for the public at large if they could be taught that plates would be better for them. True, a clasp around a living tooth may eventually cause decay, but even so, if the patient is cleanly and the clasps are properly made, there need be no injury. And even when there is, a filling in the tooth is less serious than the septicemias caused by bridgework done by men, many of whom cannot properly treat and fill a root canal, and many others of whom never even try to fill them, as the radiographers are constantly pointing out. Honestly, men, it makes me ashamed to call myself a bridgeworker when, as was the case to-night, picture after picture is shown on the screen, not one abutment root showing a proper canal filling, and eighty per cent. of them decorated with abscesses. As Dr. Schamberg said, it is a crime. Worse than that, it is a scandal."

"WHY IS A SCANDAL worse than a crime?"

"WHEN AN ACT is recognized as a crime, the criminal may be punished, but those that make scandals live on to ply their trade. It is several years since Hunter pointed out this disgrace. What has the profession as a whole done about it? A few men, a very few men, have taken Hunter's charge seriously, and if a better day does dawn for bridgework, it will be through the activities of these few."

"YOURSELF BEING one of the few?"

"I DO NOT SAY so, but I hope so. It certainly has been my endeavor to produce a style of bridgework that will serve and not endanger the patient. Whether I succeed or not let my critics say after my death. The subject is too serious for jest, even around the table."

"NO ONE MEANS to make a jest of this. But tell us if you can, where lies the solution."

"AS I SEE IT the first requisite should be that all bridgework should be removable. First because by this means it may be cleansed and thus will be more hygienic. But the main reason is this: When bridgework is firmly cemented to two, three, four or more abutments, one of these abutments may be, or may become so diseased as to be a menace to the health of the patient, and he may never come to know it because the cementation of the bridge to the other abutments hides from him the fact that this particular root has so little live attachment to its socket that it should be extracted. But if only removable bridges are used, the patient can quickly learn if one pier become so loose that it should be extracted. Not alone will it become loose, but with the frequent removals of the piece it will usually become painful. Pain is a very good thing for a patient occasionally."

"LET ME AGREE WITH YOU," said Bridgeworker No. 2, who is a pyorrhea specialist; excuse me, a periodontist—"and then let me make another point. We all recognize that fractured bones knit more rapidly if held immovable in a splint. Similarly, teeth loosened by pyorrhea can often be absolutely cured and made tight again if splinted together. But something more is needed than fixation. All diseased tissue must be removed, and all infection must be cleared up. But because teeth that have been splinted have been cured of pyorrhea, too many of you bridgeworkers, who seem to have little or no knowledge of pathology, seem to think that any two teeth tied or splinted together are at once put on the high road to recovery."

"BUT WORSE THAN THAT, because fixation is one factor in the cure of pyorrhea teeth under certain conditions, some of the bridgework specialists, or perhaps it would be more fair to say some of the general practitioners who do bridgework (note that I say "do" bridgework, not practice it); some of these men jump to the conclusion that a loose tooth

used as one of several piers in a bridge will grow tight again because held fixed by the bridge. Perhaps the truth is that such teeth, so utilized, never recover from the state of disease in which they are at the outset. Something more than fixation, either through splints or bridges, is necessary to cure pyorrhea."

"RETURN, PLEASE, TO OUR original subject," said I. "Neither of you has solved the problem as yet. The first speaker told us that the poorer people must abandon the idea of bridgework and go back to plates. Thus far he agrees with Dr. Schamberg. But what of the rich? Must they risk septic bridgework just because they have money?"

"NOT AT ALL," said Bridgeworker No. 3, a quiet man, but one who never speaks foolishly when he does speak. "But the rich, with all their money, are often fools. They pay out large sums to men who talk better, much better, than they can work. Let the rich man learn this, that health is priceless. It is the one thing that his money cannot positively buy. Then when he appreciates his health at its full value, if he needs some artificial substitutes, which he would not had he grown wise in time; but needing bridgework, let him consult a really skillful, conscientious man; a man who not only knows how to construct bridgework, but likewise where to place it as well as where not to place it. Having found such a man, let him cheerfully pay the price, and mark this, if he be really a rich man, and if he be skillfully served so that the priceless treasure, health, be restored to him, then should he return to that bridgeworker and say, 'Construct a good piece of work for one that cannot pay your fee, and send the bill to me.'"

"AMEN TO THAT," said Bridgeworker No. 4. "And, by the way, if you know a man like that, please give him my address. I like to work for appreciative folks. But, seriously, let me say a word. To my mind, the one thing which both patient and operator have yet to learn is this: The structure cannot be stronger than the foundation. Too many patients expect that fine bridgework may be placed upon weak, if not actually diseased old roots. After spending a large sum on such a bridge, very often the bridge is lost with the piers, and a new bridge must be attached to adjacent sound teeth. This is the course which might better have been followed in the first place. Had all the doubtful or diseased teeth been removed first, and nothing but living teeth and healthy gums been present, then the chances of success would have been enhanced a hundred fold. Beginning with a tooth having a living pulp, the bridgeworker should be able to remove it and properly fill the root canals, for it is the canals of dead and diseased teeth that make ninety per cent. of all the root canal problems. Moreover, if the pulp be alive at the outset, one would have better tooth bone to deal with and frequently the face of the natural tooth can be saved, and even protected, with the attachment utilized to support that end of the bridge."

"THERE IS NO DOUBT," said the Periodontist, "that your opinion is sound. ❖ Certainly, bridgework placed in a healthy mouth, on healthy roots, ❖ though pulpless, will endure longer than work constructed with doubt- ❖ ful skill upon teeth of doubtful health."

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"MEANWHILE," said I, "or until all dentists know how to fill root canals, ❖ or until all dentists who construct bridges shall have learned when, ❖ how, and where to supply them, let the Poor go bridgeless to bed!"

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"AND MAY THEY enjoy healthful sleep. Amen!"

National Society Meetings.

PANAMA-PACIFIC DENTAL CONGRESS, San Francisco, Cal., August 30 to September 9, 1915.
Secretary, Dr. Arthur M. Flood, 240 Stockton St., San Francisco, Cal.

State Society Meetings.

ARIZONA STATE DENTAL SOCIETY, date and place will be announced later.
Secretary, Dr. J. L. O'Connell, Phoenix, Arizona.

ARKANSAS STATE DENTAL ASSOCIATION, Little Rock, Ark., May 13-15, 1915.
Secretary, Dr. W. B. Dormon, Nashville, Ark.

COLORADO STATE DENTAL ASSOCIATION, June 17, 18, 19, 1915.
Secretary, Dr. Earl W. Spencer, 119-120 Pope Block, Pueblo, Colo.

FLORIDA STATE DENTAL SOCIETY, Pass-a-Grille, Fla., June 9-11, 1915.
Secretary, Dr. Alice P. Butler, Gainesville, Fla.

GEORGIA STATE DENTAL ASSOCIATION, Atlanta, Ga., June 17-19, 1915.
Secretary, Dr. M. M. Forbes, 803 Candler Bldg., Atlanta, Ga.

ILLINOIS STATE DENTAL SOCIETY, Peoria, Ill., May 11-14, 1915.
Secretary, Dr. Henry L. Whipple, Quincy, Ill.

INDIANA STATE DENTAL ASSOCIATION, Indianapolis, Ind., May 18-20, 1915.
Secretary, Dr. A. R. Ross, Lafayette, Ind.

IOWA STATE DENTAL SOCIETY, Waterloo, Ia., May 4-6, 1915.
Secretary, Dr. C. M. Kennedy, Des Moines, Iowa.

KANSAS STATE DENTAL ASSOCIATION, Topeka, Kans., May 25-27, 1915.
Secretary. Dr. A. L. Benton, Garnett, Kansas.

KENTUCKY STATE DENTAL ASSOCIATION, Ashland, Ky., June 8-10, 1915.
Secretary, Dr. Chas. R. Shacklette, The Atherton Bldg., Louisville, Ky.

LOUISIANA STATE DENTAL SOCIETY, Grunewald Hotel, New Orleans, La., June 3-5, 1915.
Secretary, Dr. P. Trowbride, Franklin, La.

MAINE DENTAL SOCIETY, Portland, Me., June 28-30, 1915.
Secretary, Dr. I. E. Pendleton, Lewiston, Me.

MARYLAND STATE DENTAL ASSOCIATION, Baltimore, Md., June 10-11, 1915.
Secretary, Dr. F. F. Drew, 701 N. Howard St., Baltimore, Md.

MASSACHUSETTS DENTAL SOCIETY, Boston, Mass., May 5-7, 1915.
Secretary, Dr. A. H. St. C. Chase, Everett, Mass.

MINNESOTA STATE DENTAL ASSOCIATION, date and place will be announced later.
Secretary, Dr. Max E. Ernst, 614 Lowry Bldg., St. Paul, Minn.

MISSOURI STATE DENTAL ASSOCIATION, Golden Jubilee Meeting, Jefferson City, June 10-12, 1915.
Secretary, Dr. S. C. A. Rubey, New York Life Bldg., Kansas City, Mo.

MONTANA STATE DENTAL SOCIETY, date and place will be announced later.
Secretary, Dr. F. W. Adams, Chicago Block, Billings, Montana.

NEBRASKA STATE DENTAL SOCIETY, Omaha, Nebraska, May 18-20, 1915.
Secretary, Dr. H. J. Porter, Cambridge, Nebr.

NEW HAMPSHIRE STATE DENTAL SOCIETY, Weirs, N. H., June 22-24, 1915.
Secretary, Dr. Louis I. Moulton, 15 No. Main St., Concord, N. H.

NEW JERSEY STATE DENTAL SOCIETY, Asbury Park, July 21-24, 1915.
Secretary, Dr. John C. Forsyth, 430 E. State St., Trenton, N. J.

NEW MEXICO STATE DENTAL SOCIETY, Albuquerque, N. M., date will be announced later.
Secretary, Dr. J. J. Clarke, Artesia, N. M.

NEW YORK STATE DENTAL SOCIETY, Albany, N. Y., May 13-15, 1915.
Secretary, Dr. A. P. Burkhart, 52 Genesee St., Auburn N. Y.

NORTH CAROLINA DENTAL SOCIETY, Wrightsville Beach, N. C., June 23-25, 1915.
Secretary, Dr. R. M. Squires, Wake Forest, N. C.

NORTH DAKOTA STATE DENTAL SOCIETY, Fargo, N. D., May 11-12, 1915.
Secretary, Dr. Tom Smith, Langdon, N. D.

OHIO STATE DENTAL SOCIETY, Columbus, Ohio, December 7-9, 1915.
Secretary, Dr. F. R. Chapman, 305 Schultz Bldg., Columbus, Ohio.

PENNSYLVANIA STATE DENTAL SOCIETY, Reading, Pa., June 22-24, 1915.
Secretary, Dr. L. M. Weaver, Philadelphia, Pa.

TENNESSEE STATE DENTAL ASSOCIATION, Sewanee, Tenn., June 24-26, 1915.
Secretary, Dr. C. Osborn Rhea, 625½ Church St., Nashville, Tenn.

TEXAS STATE DENTAL ASSOCIATION, Galveston, Texas, May 19-22, 1915.
Secretary, Dr. W. O. Talbot, Fort Worth, Texas.

UTAH STATE DENTAL SOCIETY will meet in San Francisco, Cal., during the Panama-Pacific Dental Congress in August, 1915.
Secretary, Dr. E. C. Fairweather, Boston Bldg., Salt Lake City, Utah.

VERMONT STATE DENTAL SOCIETY, Burlington, Vt., May 19-21, 1915.
Secretary, Dr. P. M. Williams, Rutland, Vt.

VIRGINIA STATE DENTAL ASSOCIATION, Richmond, Va., Nov. 4-6, 1915.
Secretary, Dr. C. B. Gifford, Norfolk, Va.

WISCONSIN STATE DENTAL SOCIETY, Oconomowoc, Wis., July 13-15, 1915.
Secretary, Dr. O. G. Krause, 1209 Wells Bldg., Milwaukee, Wis.

Vermont Board of Dental Examiners.

The next meeting of the Vermont Board of Dental Examiners, for the examination of candidates to practice in Vermont, will be held at the State House, Montpelier, commencing at 2 P. M., on June 28, 1915, and continuing for three days.

To be eligible for examination a candidate (1) must be twenty-one years of age, (2) must be a graduate of a high school of the first class, and (3) must be a graduate of a reputable dental college.

Applications must be in the hands of the Secretary not later than June 20th. For further information apply to

St. Johnsbury, Vt.

GEORGE F. CHENEY, Secretary.

Arkansas Examination.

The Arkansas State Board of Dental Examiners will hold an examination at the Marion Hotel in Little Rock, Arkansas, on Monday, Tuesday and Wednesday, June 21, 22 and 23, 1915. Applicant must be a graduate of a reputable dental school. Examination theoretical and clinical. Application and fee should be in the hands of the secretary fully two weeks before the examination. For further particulars write

IRVIN M. STERNBERG, Secretary.

Fort Smith, Ark.

Iowa State Board of Dental Examiners.

The next meeting of the Iowa State Board of Dental Examiners for the examination of candidates for licenses will be held at Iowa City, Iowa, commencing Monday, June 7th, at 9 A. M.

For application blanks and so forth address the Secretary,
417 Utica Bldg., Des Moines, Iowa.

DR. J. A. WEST.

Montana State Board of Dental Examiners.

The Montana State Board of Dental Examiners will hold a session for examination on July 12th, 13th, 14th and 15th.

DR. G. A. CHEVIGNY, Secretary.

Butte, Montana.

Pennsylvania State Board of Dental Examiners.

The regular examination of the Pennsylvania Board of Dental Examiners will be held in Musical Fund Hall, Philadelphia, and the College of Pharmacy Building, Pittsburgh, on Wednesday, Thursday, Friday and Saturday, June 9, 10, 11 and 12, 1915. The examination in practical work will be held on Wednesday at 1 P. M., at the Evans' Institute, Philadelphia, and the University of Pittsburgh, Pittsburgh. Application papers can be secured from the Department of Public Instruction, Harrisburg. Further information can be secured from the secretary.

ALEXANDER H. REYNOLDS, Secretary.

4630 Chester Avenue, Philadelphia.

Ohio Valley Dental Society

The Ohio Valley Dental Society will hold its semi-annual spring meeting and banquet at the Hotel Berry, Athens, Ohio, April 14, 1915.

DR. M. D. HARTINGER, Secretary.

Middleport, Ohio.